COUNTY BOROUGH OF BRIGHTON.

Annual Report

ON THE

HEALTH,

Sanitary Condition, &c.,

OF THE

COUNTY BOROUGH OF BRIGHTON,

FOR THE YEAR 1905,

BY

ARTHUR NEWSHOLME, M.D., F.R.C.P.,
Medical Officer of Health.

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COUNTY BOROUGH OF BRIGHTON.

Sanitary Committee.

The Mayor (Mr. Alderman COLBOURNE, J.P.),
Mr. Alderman BLAKER, J.P.,
" " BUCKWELL, J.P.,
, " MARX,
" Councillor BLACK,
" " BROWN,
" " BURBERRY,
" " BUTT-THOMPSON,
" " EVANS,
" " HEUN,
" " LINTOTT,
" " SONE (Chairman),
" " TITCOMB.

Town Clerk: HUGO TALBOT, Esq.

Staff of the Public Health Department.

INSPECTORS.

JOHN NORRISH (Certif. San. Institute), Assistant Inspector of Nuisances.
JAMES A. CUCKNEY " " " " "
(Superintendent of Abattoir).
ERNEST E. MILLS " " " " "
(Inspector under the Factory and Workshops Act and Shop Hours Act).
FREDERICK BRAYBON (Certif. San. Institute) " "
ARTHUR WARD (Certif. San. Institute) " "
JOSEPH WEBB " "
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ALFRED WELLSTED " "
JOHN BAKER, Disinfector.
HERBERT WM. HEASMAN, Senior Clerk.
HENRY NEWMAN, Junior Clerk.
CHARLES GREENFIELD, Junior Clerk and Messenger.

Matron of Sanatorium: Miss RATCLIFF.

House Physician & Deputy to Medical Officer of Health.

L. KINGSFORD, M.D., Edin., D.P.H., March, 1904-May, 1905.
T. BARRETT HEGGS, M.D., Aberd., D.P.H., May-Dec., 1905.

Chief Inspector of Nuisances.

JAMES F. SKINNER (Certif. San. Institute).

Public Analyst: MEREDITH WYNTER BLYTH, B.Sc., F.I.C.

Medical Officer of Health: ARTHUR NEWSHOLME, M.D.

PREFACE.

Town Hall, Brighton,
February 28th, 1906.

To the Sanitary Committee of the Brighton Town Council.

Gentlemen,—

I have the honour once more to present my Annual Account of the work of the Public Health Department, and in doing so to draw attention to the fact that the general death rate and the death rate from infectious diseases reached during 1905 a point considerably lower than in any preceding year.

This report, in addition to the ordinary routine information, comprises more detailed discussions of important subjects, among which attention may be drawn to the paragraphs relating to infantile mortality, the dangers of sweetened condensed milks, and the co-ordination of local measures against Tuberculosis.

I am, Gentlemen,
Yours obediently

Arthur Newsholme, M.D.,
Medical Officer of Health.

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VITAL STATISTICS.

POPULATION.

The estimated population of the County Borough at the middle of 1905 was 127,183.

The Borough Surveyor reports that 407 new dwelling-houses were passed by the Town Council during 1905, as compared with 538 in 1904 and 725 in 1903. These were situate in the following wards: Preston 155, Preston Park 117, Lewes Road 69, Kemp Town 25, Queen's Park 27, St. Peter's 5, Montpelier Ward 9. The population enumerated at the census was 123,478, and the number of inhabited houses was then 21,659, or 5·7 persons per house. Assuming that the additional houses are occupied by additional inhabitants on the same basis as at the census, the population for 1905 would be 137,523, which is probably much above the real numbers.

BIRTHS.

The total number of births registered in the Borough in the 52 weeks ending December 30th, 1905, was 2,911—1501 of boys and 1,410 of girls. This is equivalent to a birth-rate of 22·8 per 1,000 inhabitants. The average birth-rate of the seventy-six great English towns was 28·2, per 1,000.

Of the births, 169 were of illegitimate children, forming 5·8 per cent. of the total births. 45 births occurred in the Workhouse, of which 31 were of illegitimate children.

The birth-rate has steadily declined for many years. In 1881 it was 30·6 per 1,000, in 1891 it was 26·2, in 1904 it had fallen to 23·5. Stated more accurately, after corrections have been made for the varying proportion of married women and of women at child-bearing ages, the legitimate birth-rate declined from 29·05 in 1881 to 23·34 per 1000 in 1901, the illegitimate birth-rate from 1·72 to 1·30 per 100, and the total birth-rate from 30·77 to 24·63, which is equivalent to a reduction of 20 per cent.

DEATHS.

Last year, 1,721 deaths from all causes were registered as belonging to Brighton, including 48 in the Borough Asylum at Hayward's Heath, which is equivalent to a death-rate of 13·5 per 1,000. The death-rate in the 76 great towns was 15·7 and in London 15·6 per 1,000.

A comparison with Brighton in former years is given in Table III., page 75. In Table I., the most important causes of death are given each Ward.

The following table shows the general course of the Brighton death-rate during a long series of years :—

		Death-rate per 1,000 population from all causes.
Ten years	1851-60	25·0
	1861-70	25·6
	1871-80	20·5 (Preston incorporated in 1874)
	1881-90	18·5
	1891-1900	17·6
	1901-04	15·8
	1905	13·5

The death-rate was the lowest on record.

DEATHS OF VISITORS.

Of the total deaths registered during last year, 73 occurring in private houses, 66 in the County Hospital, and 16 in the Children's Hospital, 5 in the Workhouse, and 3 in the Home for Incurable Children, 1 in the Hospital for Women, 2 in the Throat and Ear Hospital, and 1 in the French Convalescent Home were stated to be of visitors. The return of deaths among visitors is incomplete, many of the deaths occurring amongst visitors not being marked as such. Thus at a nursing-home in Sillwood Place, three deaths of visitors, and at a nursing-home in Upper Rock Gardens one death of visitors, occurred.

During 1905, the deaths in the County Hospital comprised 104 deaths of inhabitants of Brighton, 44 of persons from other parts of Sussex, &c., 15 from Hove, and 7 London, &c.

Of the 47 patients dying in the Children's Hospital during 1905, 8 came from Hove, 6 from other parts of Sussex, 2 from London, and 31 were Brighton patients.

The Registrar-General excludes from the Brighton returns the deaths occurring in the Female Convalescent Home, Marine Parade, in the Home for Incurable Children, in the Sussex County Hospital, and in the Borough Sanatorium respectively, of persons who had not resided in the Borough prior to their admission into these respective institutions ; and includes on the other hand the deaths of any Preston paupers which occur in the Steyning Union Workhouse. In 1905, the deaths at the Hayward's Heath Asylum have also been added.

No correction is made for the large number of visitors dying in private houses or for deaths of non-residents in the smaller Hospitals enumerated above.

DEATHS IN PUBLIC INSTITUTIONS.

Of the total deaths, 220 occurred in the Workhouse, 170 in the Sussex County Hospital, 47 in the Children's Hospital, 10 in the Sanatorium, 5 in the Hospital for Women, 3 in the Throat and Ear Hospital, 3 in the Shoreham Workhouse, 1 in the French Convalescent Home, and 3 in the Home for Incurable Children. Total 462.

THE CAUSES OF INFANTILE MORTALITY.

The deaths under one year in 1905 numbered 297, which is equivalent to 102 per 1,000 births, the lowest figure on record. In Table II., page 74, special particulars as to infantile mortality are given. In this table the chief causes of infantile mortality can be studied.

(*a*) *Distribution of these deaths according to age.*—Of the total 297 deaths of infants, 69 or nearly 23 per cent. occurred in the first week of life, and 103 or 35 per cent. occurred in the first four weeks of life. In the second month of life 12½, and in the third 11½ per cent. of the total deaths during the first year occurred. Thus during the first quarter year 55 per cent. of all the first year's deaths occurred, in the second three months 20 per cent., in the third 14½ per cent., and in the fourth 10½ per cent. of all the first year's death. Special significance must be attached to the deaths in the first week of life. It is unlikely that measures directed towards the infants themselves will do much to diminish this heavy death-toll. More than half of the number are due to premature birth and congenital defects: and the only measures which could influence these would be those acting on the mothers. Even such measures, to the extent to which they may be practicable, must not be expected to do more than diminish to a modest extent this heavy mortality in the first year of life. Some light is thrown on this point by a study of the social condition of the parents of 66 of the 69 babies dying last year in the first week of life, concerning whom the particulars could be obtained. Of this number 6 were illegitimate babies, 17 the babies of labourers, 28 of artizans, and 15 of persons of the shopkeeping and clerk classes.* Of the same number two were born and died in the Workhouse, and two in the Lying-in-Institution. Only one was ascribed to syphilis, but this is almost certainly an understatement of the facts, as syphilis is a common cause of premature birth. Four were due to overlaying by the parents, and four were attributed to convulsions. Whether these were due to bad feeding or to injury at childbirth must remain open to doubt.

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*These six deaths of illegitimate babies in the first week of life occurred out of 39 such deaths in the first year of life, or rather less than one-fifth of the total. The corresponding number in each of the other groups cannot be given, but taking them together rather over one-fifth of the total deaths in the first year of life occurred in the first week.

(*b*) *Distribution according to legitimacy.*—Of the 297 deaths under one year, 32 were of illegitimate children. This number equals an infantile death-rate among illegitimate babies of 189 per 1,000 births, as compared with 97 per 1,000 births among legitimate babies. Of the 32 deaths of illegitimate babies 6 occurred during the first week of life, 1 in the next three weeks, 7 at ages 1-3 months, 9 at ages 3-6 months, and 15 in the second half of the first year of life.

The significance of this gradation of deaths is rendered more obvious when the corresponding gradation for legitimate births is given as in the following table:—

	Under 4 weeks.	1-3 months.	3-6 months.	6-12 months.
Number of Deaths of Babies under one year of all				
Legitimate	96	54	50	59
Illegitimate	7	7	9	15

It will be seen that the danger of death among legitimate babies greatly declines after the first month of life. Thus in the nine last months of the first year of life only about 14 per cent. more deaths occur among legitimate babies than in the first four weeks of their life; whereas among the illegitimate babies 243 per cent. more deaths occur in these nine months than in the first four weeks of life. The dangers of illegitimacy are evidently connected with the nursing out of such babies.

(*c*) *Distribution according to causes of death.*—We have already seen that premature birth is credited with a large share of the total infantile mortality. If to this be added marasmus, atrophy, &c., we have 64 deaths occurring in the first four weeks of life out of 103 total deaths under 4 weeks of age and out of 297 under 1 year of age. These must be regarded as in the main unpreventible by any measures directed towards the babies themselves. Taking the chief single causes of death among infants in the order of their numerical importance we have the following list:—

Premature Birth and Congenital Defects... ...		62
Want of Breast Milk, atrophy, debility, marasmus		36
Diarrhœa ...	33	51
Enteritis ...	18	
Pneumonia		26
Bronchitis		17
Overlaying		11
Syphilis		10
Convulsions		10

The subject of Diarrhœa is fully dealt with on page 25. It is in part at least due to artificial instead of natural feeding of babies.

Convulsions are frequently caused by bad feeding: but as 4 out of the 10 occurred under the age of one week these may be regarded as outside this category. Many of the deaths from marasmus, atrophy, debility, &c., must be ascribed to bad feeding: but it is to be remembered that concealed under these indefinite names are many cases of inherited syphilis. Coming next to the 43 deaths due to bronchitis and pneumonia, it should be noted that except 14, all these occurred in babies over 3 months old. Bronchitis and pneumonia as a rule mean infection. Chill may aid infection, but the essential cause is infection, and cleanliness of the environment of the baby is one of the chief means of preventing this. Measles and whooping cough are sometimes the causes of infantile bronchitis and pneumonia, although not stated in the death-certificate. Rickets only figures as the cause of death of two infants. In reality this disease was undoubtedly the reason which determined the fatal result in many of the deaths from bronchitis and pneumonia; and it is a disease almost confined to babies artificially fed.

Relationship of Infantile Mortality to Artificial Feeding of Babies.—On page 28, this subject is fully discussed in relation to infantile diarrhœa. The chief means of preventing infantile diarrhœa is to encourage the breast-feeding of babies. It is not sufficiently recognised, however, that the same remark applies to other causes of infantile mortality. For this reason we have recently distributed copies of a card containing the following information in addition to the "Hints as to the Management of Children," which are distributed by the registrars of births, &c.

"THE FEEDING AND MANAGEMENT OF BABIES.

"Do not be persuaded to give up nursing your own baby, unless this is specially ordered by a doctor—a very rare event.

"*The best food for the baby is mother's breast milk alone without any other food whatever.* Babies nursed by their mothers have nearly three times as good a prospect of reaching one year of age as babies who are hand-fed. Consider then the danger to your baby's life which is incurred by not giving it breast milk during the first nine or ten months of its life.

"*It is especially dangerous to wean your baby during the summer months* of June, July, August and September. Death from Diarrhœa is very common among hand-fed babies, very rare among breast-fed babies.

"The permanent welfare of your baby, even it survive beyond childhood, is endangered by hand-feeding. Rickets is very common in hand-fed, rare in breast-fed children. Nearly every artificial food contains too little fat for babies. It is babies that are starved of fat who become ricketty. Rickets is a very serious disease, not only because it deforms the children's limbs, producing "bandy legs," &c., but also because it greatly favours chest ailments, and makes children more likely to die of whooping cough, measles, &c.

"After the first year of life, as well as in infancy, *too little fat in the diet is the most frequent error* from which children suffer. Do not forget that butter, dripping and margarine, cannot be replaced by jam and sugar, though these also are valuable, but less so than fats. Margarine is a perfectly wholesome fat. Give your children lots of margarine or dripping on bread if you cannot afford butter.

"But remember that in the first nine or ten months of the baby's life nothing forms an efficient substitute for the mother's breast.

"FURTHER ADVICE AS TO BABIES.

"*Never* give the baby bread sops or gravy, or any food except milk, until it is more than seven months old.

"*Never* use a feeding-bottle with a long tube.

"*Never* use a dummy teat or "comforter."

"Dirt is the great danger to the baby's health. Comforters are always getting dirty, and a long-tubed feeding bottle cannot be kept properly clean.

"*Never* give the baby soothing syrups, or teething powders, or anything of the sort.

"*Never* give a baby tea.

"ARTHUR NEWSHOLME,
"*Medical Officer of Health.*

"Public Health Department,
"Town Hall, Brighton.
"*January*, 1906."

The above facts give added importance to the statistics on methods of infantile feeding on page 28, which show that three out of every four mothers perform their natural duty to their babies. It is among the remaining fourth that the heaviest infantile death-rate occurs.

What is being done to diminish infantile mortality?

1. The registrars of births and the doctors and nurses of the County Hospital, Lying-in Hospital, and Children's Hospital, and the midwives of the town, are supplied with copies of the "Hints as to the Management of Children," and "The Feeding and Management of Babies," and these are distributed to mothers. The former of these has now been distributed from 1896 onwards.

2. Each year, for at least 10 years, in the month of June or July, 10,000 copies of the card entitled "How to prevent Diarrhœa," which was printed on page 49 of my Annual Report for 1904, are distributed from house to house in the poorer districts of the town.

3. The more direct municipal measures calculated to diminish diarrhœa, whooping cough and measles, have an important bearing on the same subject, and these are being vigorously pursued.

4. While not agreeing with the exaggerated statements as to the importance of milk contamination in regard to infantile mortality which have gained currency, there is no doubt that the efforts made by the Sanitary Authority to improve the milk supply have an important bearing on the diminution of infantile mortality. These are detailed on pages 50 and 70. It must be confessed that the measures to control milk contamination have only a limited success:—

(*a*) As to milk *cleanliness*.

(*b*) As to milk *impoverishment*.

Dirty milk is still supplied to towns, owing to the lack of efficient supervision at the farm, and owing to the uncleanly methods in use in the majority of English farms. Many large dairy companies have excellent clauses in their agreements with farmers on this point, but efficient enforcement of such clauses is still the exception. It is true that, as pointed out on page 29, domestic contamination is more important in regard to summer diarrhœa than farm contamination or contamination in transit; but this is no reason why milk should be vitiated from its source. The problem of keeping milk sweet and wholesome for babies is unnecessarily complicated by this initial uncleanliness.

In regard to the impoverishment of milk, there is an almost equally unsatisfactory record throughout the country. Minimum standards are accepted as maximum requirements, and a very large proportion if not an actual majority of babies fed on cow's milk get such milk diluted down, by means of machine skimmed milk, to the minimum standard or a little below it. Medical officers of health and analysts are helpless in this matter, so long as circular letters of the Board of Agriculture can be quoted which lead to magisterial leniency even when impoverishment of milk has been proved.

5. The voluntary efforts of the Brighton and Hove Women's Health Society, founded in 1897, have been helpful. Each year a number of addresses are given to Mother's Meetings in the town on the management of babies and allied subjects, and much good is ~~a~~effected, which could be greatly increased if subscriptions, which may be sent to the Hon. Sec., 15, German Place, were increased. At

the present time an effort is being made to obtain sufficient funds to secure the whole services of a qualified lady for this work, which I trust may be successful.

6. Mr. Clifford, the inspector under the Infant Life Protection Act, states that 11 persons have notified the fact that they receive for payment more than one infant under 5 years of age, the total number of infants kept being 26. He reports that all the children when inspected were well cared for. He thinks that the limit of £20 under sec. 5 should be removed. It is open to question whether the evil resulting from concealment of birth or erroneous registration would be greater than the good that might be done by enacting that all single illegitimate babies put out to nurse should be subject to inspection under the above Act. The subject is worthy of further investigation, in view of the excessive mortality among illegitimate babies shewn on page 10.

The scheme of work of which some of the items are named above does not exhaust the possibilities of work with this object in view.

What further could be done?—Work in the above directions should be extended. We greatly need a lady inspector for this purpose, and I hope the Town Council will, after awhile, see their way to the appointment of one, who would also act as inspector of midwives. As explained on page 40, the work under the Midwives Act can scarcely be said to have been begun, and if in connection with it visits to advise recent mothers could be given, much saving of life might be effected. Meanwhile every midwife (and so far as the addresses can be obtained, every monthly nurse) is being supplied with copies of the two leaflets of instructions named before, and it is hoped that this may do considerable good.

The teaching of hygiene and domestic economy in our elementary and evening schools is already receiving considerable attention. I hope that in the near future much more time and energy will be devoted to these subjects, which have so important a bearing on the welfare of the community.

These two lines of action do not cover the entire ground. Moral training is an even more important means of preventing infantile mortality than the imparting of knowledge. The standard of comfort and cleanliness of the home determines in a very large measure the amount of infantile mortality, and the future health of children if they escape, however disabled by the struggle, the dangers of the first year of life. Poverty as urged in former reports is at the back of many of our sanitary difficulties. No one panacea can provide a remedy for poverty, which may be due to so many causes; and I am as desirous as anyone that nothing should be done to diminish active help to those sunk in poverty, whose children suffer in consequence of this fact. But practical social reformers cannot disguise from themselves the fact that alcoholic indulgence is one of the chief causes of poverty, of constant lack of comfort and cleanliness in the home, and of diminished prospect of life and health for the children. It is in view of my appreciation of the importance of this factor in the problem that I have secured by the kind subscription of friends, the issue of a Temperance Calendar, of which 5,000 copies printed on stiff cards, have been distributed to householders, in the hope that the attractiveness of the calendar would induce them to keep it permanently on their walls.

Chief Causes of Deaths.

The chief causes of death, and the number of deaths from each disease or group of diseases, are tabulated in Table V., page 77. This table gives the relative incidence of different diseases, and the incidence of each disease in the two sexes and at different ages. In three cases the cause of death was not medically certified.

NOTIFICATION OF INFECTIOUS DISEASES.

On March 1st, 1891, the Infectious Diseases (Notification) Act was adopted in Brighton.

The returns furnished to me under this Act shew that the number of *cases* of infectious diseases notified during 1905 was:—diphtheria, 221; membranous croup, 2; scarlet fever, 206; enteric fever, 34; erysipelas, 85; puerperal fever, 9; small pox, 0.

The above is the number of supposed *cases* of infectious disease. Further observation in a certain proportion of these led to a revision of the diagnosis.

Four cases of diphtheria, 1 of enteric fever and 2 of puerperal septicœmia were notified severally by two doctors.

The total number of notifications (including 4 notified by the Medical Officer of Health) was 564, as compared with 578 in 1904. Of the total, 123 occurred in public medical practice—the amount payable for the certificates being £6 3s.; while 437 occurred in private medical practice—the amount payable being £54 12s. 6d. The total amount paid for notification certificates was £60 15s. 6d.

Number of Cases of Infectious Diseases notified in each month of 1905, and Number of Deaths from Diarrhœa and Enteritis.

	Cases of						Deaths from	
	Small Pox.	Diphtheria and Membranous Croup.	Scarlet Fever.	Typhoid Fever.	Erysipelas.	Puerperal Fever.	Diarrhœa.	Enteritis.
January ...	—	44	24	4	11	1	—	—
February...	—	31	10	5	8	1	3	1
March ...	—	27	20	4	8	—	—	1
April ...	—	22	8	1	4	1	—	1
May ...	—	24	4	2	12	—	—	1
June ..	—	6	14	5	5	—	—	1
July ...	—	15	38	1	1	—	1	—
August ...	—	5	15	4	6	1	16	6
September	—	22	10	2	4	—	18	8
October ...	—	13	21	6	9	2	5	4
November	—	4	19	0	9	2	1	2
December	—	10	23	0	8	1	—	1
Total	—	223	206	34	85	9	44	26

SMALL POX.

No cases were notified during 1905.

CHICKEN POX.

This disease ceased to be compulsorily notifiable on Jan. 24, 1904. During 1905, 92 cases of chicken pox came to our knowledge from schools, etc.

SCARLET FEVER.

The incidence of scarlet fever since notification came into operation is shewn in the following table :—

	Number of cases per 100,000 of population.	Number of deaths per 100,000 of population.	Case-mortality. Number of deaths per 100 cases notified.
1892	320	7	2·1
1893	408	9	2·2
1894	185	3	1·6
1895	164	4	2·5
1896	206	5	2·3
1897	270	10	3·7
1898	305	6	2·0
1899	667	8	1·2
1900	474	10	2·1
1901	142	1	·6
1902	117	2·4	2·1
1903	155	0	0
1904	136	1·6	1·1
1905	162	0·8	0·5

Only one death from scarlet fever occurred during 1905. Of the total 206 notified cases 166 or 80·6 per cent. were treated in the Sanatorium. Of the total cases, one case occurred in 157 private houses ; in each of 17 houses, two cases occurred ; in each of 3 houses, three cases occurred ; in 1 house, six cases occurred.

Return Case—Home Treatment.—One case occurred during the year, in which a 2nd child in the family was infected by the ex-patient, after the latter had been strictly isolated for 25 days, had then been separately in a country village for 4 days, then with the about-to-be infected patient at the same place for 10 days, afterwards with him for 21 days at home before he failed with scarlet fever. Thus an interval of 32 days had elapsed between the cessation of isolation of the ex-patient and the probable date of infection of the second. During this interval the ex-patient had no mucous discharges, and the only change which may have bearing on the infection was the fact that the two began to sleep in the same room (not in the same bed) twelve days before the second patient fell ill. The arrangements as to isolation of the first patient and subsequent disinfection were satisfactory.

Return Cases—Hospital Treatment.—Two cases occurred.

R. F., æt 6, was admitted to hospital October 31st, 1904, on the second day of an attack of scarlet fever. When admitted he had purulent nasal discharge and this persisted throughout his stay in hospital. He was sent home

December 15th, and is stated to have had no further nasal discharge until December 28th, when he had a "bad cold in the head." His brother, R. F., æt 6, slept in a separate room from R. F., but occasionally used the same handkerchief. He failed with scarlet fever on January 5th. A sister, æt 9, was away from home from 1st January to 17th January. Although in contact with R. F. at other times she escaped infection. Three older brothers and sisters, æt 17, 16 and 20, also escaped. None of these had scarlet fever previously.

G. D., æt 8, failed with scarlet fever June 15th, admitted to hospital on the 19th, and discharged on August 28th, at end of 68 days. She had purulent nasal discharge beginning within a day of admission, which she is said to have had for a long time, and had been treated at the Throat Hospital for it. On the 8th August, her temperature went up to 102°, next day 101·6°, she vomited on 13th, no rash, and soon convalesced. When discharged on August 28th, there was no desquamation. She slept in the same room but in a separate bed from E. D, æt 7, and the two children played together from the 28th August to 9th September. On this day they went with their mother to Richmond, returning home on the 18th September. The two slept in the same bed while at Richmond. A number of visits were made in London, and on the 18th an exhausting programme of visits was carried out. There is no evidence of scarlet fever at any of the places visited. Two days after returning home to Brighton, E. D. failed with scarlet fever, i.e., 24 days after G. D. left the Sanatorium.

Milk outbreak of Scarlet Fever.—In July a small outbreak of scarlet fever occurred, during my absence on leave, which was happily traced to an infected milk supply X, when only 6 cases connected with the milk supply in question had been notified. The prompt measures then taken resulted in the outbreak being confined to 19 cases in 18 houses.

X had a supply of milk from 13 farms, and had over 30 men engaged in distributing milk in Brighton, and served 5 shops in addition with milk from these farms. The total milk supplied by X in Brighton was 900 to 1,300 gallons a day. Fortunately in consequence of a former recommendation from me, X had so kept his books that with the exception of the shops supplied by him (in connection with which 2 in addition to the above 6 cases had been notified when the infection was discovered) the farm from which each milk-carrier's milk on each round was distributed could be identified. The following table shows in the first column for each of the above-named six cases, the date of attack; in the second column the milk-carrier's number. In the four next columns are given the source of supply on each of four days preceding the date of attack. It will be noted that there were two or three daily supplies to each house, the first one supplying most milk. The name of the farm from which each supply of milk was received is shewn by letters. It will be noted that the milk of 7 farms supplied these six houses then known to be infected. A

6

glance at the table will shew that the only supply common to all the cases was that marked **A.** This milk was found to come from two farms near each other in West Sussex.' Dr. Heggs visited these farms immediately—on July 15th. At the first of the two farms no evidence of scarlet fever was found among workmen or their families, and the cows were healthy. At the second farm, several cases of previously unrecognised scarlet fever were discovered. A milker had failed with scarlet fever on the previous day, his daughter on the 13th. The brother, aged eight, of another milker, was found

ANALYSIS OF THE SOURCE OF THE DAIRY MILK SUPPLIED TO THE FIRST SIX CASES OF SCARLET FEVER.

Initials of Farm whose milk was delivered on

Case.	No. of Milk Carrier	July 8th.	July 9th.	July 10th.	July 11th.	
1. (Onset 12th)	No. 21	**A**	C	**A**	D	1st round.
		B	B	B	B	2nd round.
		A	C	**A**	D	3rd round.
2. (Onset 12th)	No. 16	D	B	E	F	1st round.
		B and **A**	B and **A**	B and **A**	B and **A**	2nd round.
		A	**A**	**A**	**A**	3rd round.
3. (Onset 13th)	No. 3	E	B	F	**A**	1st round.
		B	B	B	B	2nd round.
		D or C	D or C	D or C	D or C	3rd round.
4. (Onset 11th or 12th)	No. 12	E	**A**	E	D	1st round.
		B	B	B	B	2nd round.
		D or C	D or C	D or C	D or C	3rd round.
5. (Onset 13th)	No. 19	D	G	E	**A**	1st round.
		D or C	D or C	D or C	D or C	2nd round.
6. (Onset 12th)	No. 24	**A**	**A**	**A**	**A**	1st round.
		D or C	D or C	D or C	D or C	2nd round.

to be "peeling" (onset of illness 7th July). Another brother failed with scarlet fever on the 15th, and the mother on the 17th. The farmer's housekeeper had failed with scarlet fever on the 11th, and the daughter on the 13th. Two cases of sore throat without rash were also discovered and isolated. There was thus a considerable outbreak of scarlet fever on the farm, the first case on the farm preceding the first case in Brighton. It was ascertained that the first patient on the farm had acquired his infection at the village school, where two previously unrecognised cases of scarlet fever had been discovered at school a few days before the above visit. It should be added that a cow on the farm, when visited by the Brighton veterinary surgeon on the 17th July, was found to have a scabby ulcer on one teat. It was not otherwise ill. Cultures from this scab failed to show any streptococci. As already stated, six cases were known when the above steps were taken, not reckoning two cases in connection with shop supplies of milk. Eleven other cases in ten further houses occurred, the latest onset being the 16th July. The outbreak suddenly ceased on stopping the above milk supply.

The amount of milk daily supplied by the above farmer to Brighton was 90 gallons, which would probably go approximately to 720 houses. This implies a house incidence of 2·5 per cent. In the 15 implicated houses in which the facts could be ascertained, 99 persons lived; thus roughly 1 out of 6 was infected. We did not ascertain exactly how many of these drank milk, in order to avoid any imputation on the milk. The milk-vendor was specially commended by the Sanitary Committee for his important and successful co-operation in preventing a much more serious outbreak; and in the light of the fact that it would have been impossible thus early to trace the source of the outbreak in a milk supply of such various sources as this, had not the milk-vendor been acting on advice given to him some years earlier by the Medical Officer of Health, the following circular letter was sent round to all milk-vendors:—

"THE IMPORTANCE OF BEING ABLE TO IDENTIFY THE EXACT SOURCE OF MILK SUPPLY.

"*November 24th, 1905.*

"DEAR SIR,—Circumstances have drawn my attention to the difficulty which arises in identifying the original source of milk distributed in the town, especially in the case of large dairies obtaining milk from a number of different farms. It may be within your knowledge that occasionally, though rarely in the experience of Brighton, infectious diseases such as Scarlet Fever, Diphtheria and Typhoid Fever, have been spread by milk supplies. In order to enable the Sanitary

Authority to ascertain the true facts in any case of suspicion, dairymen are under a legal obligation (Section 55 of the Brighton Improvement Act, 1884) to furnish when required a full and complete list of their customers to the Medical Officer of Health. It is obvious, however, that if enquiries were made at each house named on a list thus furnished, some risk would arise of damaging the business of the dairyman, and the above powers have therefore been seldom utilised. When utilised, or even if the necessary information were obtained otherwise, the result would, when infection is traced to a given milk supply, be that the entire supply by a given dairyman or Company would need to be stopped; whereas if the method which I am about to suggest were universally adopted, it would at the worst scarcely ever be necessary to stop the milk from more than one farm, and this could be done with the utmost privacy, without any injury to the trade.

"The method to which I allude is one already used at my suggestion by some dairymen in the town, and one which has been found to be of great utility in the interest of the Public Health, and has obviated serious expense and loss of custom for the dairymen who have employed it.

"The method consists in ear-marking the source of the milk distributed in each round by each milk carrier, and recording the facts day by day. It implies also that the milk from different farms will not be mixed. When this method has been adopted it is easy to place one's finger at once on a source of infection, to visit the farm or other place in which the infection has originated, and by this means to prevent more than a minimum amount of disorganisation of business, as well as a minimum amount of infection.

"I venture to ask your co-operation in introducing into your business the above method of *booking each day the source from which the milk in each milk-round is derived*, and thus insuring your business against disturbance, as well as co-operating in preventing the introduction of infection into the town.

"Believe me,

"Yours faithfully,

"ARTHUR NEWSHOLME, M.D.,

"*Medical Officer of Health.*"

DIPHTHERIA.

The incidence of diphtheria in Brighton, since notification came into operation, is shewn in the following table :—

	Number of cases per 100,000 of population.	Number of deaths per 100,000 of population.	Case-mortality. Number of deaths per 100 cases notified.
1892	93	20	20·2
1893	157	30	18·4
1894	109	22	21·1
1895	172	16	8·8
1896	142	17	10·9
1897	154	10	6·5
1898	313	18	5·8
1899	547	51	9·2
1900	554	58	10·2
1901	567	52	9·1
1902	349	29	8·3
1903	326	26	7·8
1904	213	13	6·0
1905	174	4	2·2

The steady fall in the death-rate from this disease is gratifying, so low a death-rate as that of last year not having been reached since 1880. The number of cases has not declined quite proportionately to the number of deaths. This is partly owing to the fact that bacteriological diagnosis now discovers cases of diphtheria which in past years escaped unnoticed.

Doubtful Return Case.—I. T., æt 3½, admitted Sanatorium July 3rd, on 2nd day of an attack of diphtheria, implicating throat and nose. He was sent home on 14th September, with slight water nasal discharge, three consecutive swabs having shewn only Hoffman bacilli. On 26th September, W. G., a boy who played with B. T. brother of I. T., failed with diphtheria, and on examining the latter and his mother, Mrs. T., both showed diphtheria-bacilli in their throats. There was no definite evidence of diphtheria in either of these, and the nature of the association between the cases is still open to doubt.

Protracted Infection.—The following case illustrates very well the protracted duration which characterises certain cases, whether treated at home or in hospital.

S. R. æt 5, failed with " sore throat " on September 26th, '04, but no doctor was called in. He returned to school October 3rd and 4th, and the fact that he had been ill was not discovered until his brother, F. R., failed with diphtheria on October 4th and his sister, F. R., on the 5th. All three children were kept at home. On November 24th S. R. still had Klebs-Lœffler bacilli in his throat, and these persisted as shewn by six examinations made between December and March. The sister, F. R., had a positive swab until April 15th, and the brother, F. R., until March 4th. Subsequent swabs from these two proving negative, they were released from their isolation, and S. R. isolated alone. As infection persisted in his throat, and the school-life of the other children was being interfered with, S. R. was admitted to the Sanatorium on July 27th, apparently well, but having very large tonsils. Tonsillotomy was done. He was sent home on October 14th, still having positive swabs, being kept away from other children. The first negative swab obtained was on December 20th, '05, *i.e.*, about 15 months after the onset of his illness. He had been in the country between October 13th and December 20th, and the exact date when his throat ceased to harbour diphtheria-bacilli cannot, therefore, be given.

Multiple Cases in Houses.—Of the total 221 cases notified, there was one case each in 169 private houses, two cases each in 12 houses, three cases each in 12 houses, and in one house four cases.

ENTERIC OR TYPHOID FEVER.

The incidence of enteric fever, since notification came into operation, is shown in the following table :—

	Number of notified cases per 100,000 of population.	Number of deaths per 100,000 of population.	Case-mortality Number of deaths per 100 cases notified.
1892	54	7	12·7
1893	65	13	19·5
1894	69	9	13·0
1895	72	12	16·6
1896	101	12	11·2
1897	94	17	18·1
1898	105	15	14 3
1899	148	20	13·7
1900	67	10	14·4
1901	37	5	13·0
1902	52	11	21 5
1903	31	3	10·3
1904	27	5·5	20·6
1905	27	1·6	5·9

Of the 34 total cases which were notified, three subsequently proved not to be enteric fever. Of the remaining cases, ten were imported, *i.e.*, due to infection derived while the patient was living away from Brighton. Five were caused by personal infection, one being secondary to an imported case, and two ~~to~~ cases the source of which could not be discovered, and two to unnotified and unrecognised cases.

In nine other cases the source of infection could not be traced. In one of these the patient died before information could be obtained.

Seven cases were probably due to infected oysters or mussels. *Case 1* was a publican, who frequently bought oysters and mussels from customers, which were derived from Southwick. *Case 2*, on or about 20th February ate a number of imperfectly cooked mussels. On the 26th February he also ate oysters. Both the mussels and oysters came from Southwick. He failed with enteric fever on March 5th. *Case 3*, a cook, died before full information could be obtained. She fell ill with enteric fever about May 10th, and on or about April 23rd had bought and eaten oysters at a shop off the Western Road. In each of the above cases no sanitary house defects were discovered, and no evidence of infection except from the shell-fish was obtainable. A *4th Case* was the proprietor of an oyster shop, whose son had enteric fever in 1904. This patient has probably had enteric fever three times, the first attack 14 years ago when he had an illness of six weeks duration, thought to be influenza. The second attack was in 1895, when he was again thought to have influenza and was three weeks in bed, and afterwards three weeks in the country convalescing. The third or present attack began in February, 1906. He was an oyster and mussel vendor at the time of each of these attacks, and although reluctant to do so, admitted that occasionally he ate oysters. He got his oysters from Southwick.

In a 5th case there was suspicion respecting shell-fish. F. W., a young man, aged 17, failed with enteric fever on July 16th. He was an assistant at a fried fish shop at which were sold winkles. The winkles came from Billingsgate and were washed and cooked after arrival. The patient could not be interviewed, and no further facts could be ascertained.

A 6th case was probably due to mussels, raw mussels having been eaten on April 21st, and diarrhœa having started on the 24th, followed by general malaise, which continued until 15th June, when he was admitted to the Sanatorium. The facts indicate that he had a mild attack of enteric fever before admission and that the attack which he had after admission to the Sanatorium was a relapse.

In a 7th case the introduction of mussels into the affected household was the only fact which could be discovered having any bearing on the probable source of the infection. M. N., æt 10, failed with enteric fever on January 16th, and was admitted to hospital January 23rd. He was still there when 34 days later his mother fell ill with the same disease. On the 1st January she ate a quantity of raw mussels. There were six other members of the household who ate no mussels, and all excepting M. N. remained well. No other source of infection was discoverable. I am unable to say whether—notwithstanding negative information on this point which was received—the mother had a slight attack of diarrhœa and even of enteric fever before M. N.'s attack and infected him, or whether possibly M. N. was infected by mud from the mussel shells, which are derived from what is practically a sewage bed.

WHOOPING COUGH AND MEASLES.

The death-rate from these two diseases shews marked variations from year to year as indicated in the following table :—

Annual Death-rate per 100,000 inhabitants from Measles and Whooping Cough.

Year.	Measles.	Whooping Cough.	Year.	Measles.	Whooping Cough.
1882	143	115	1894	30	12
1883	51	57	1895	20	34
1884	7	33	1896	46	27
1885	31	41	1897	14	21
1886	10	60	1898	67	18
1887	64	28	1899	1	16
1888	3	43	1900	43	28
1889	40	24	1901	10	21
1890	53	89	1902	24	23
1891	24	18	1903	4	12
1892	100	19	1904	71	28
1893	12	47	1905	2	9

I reported very fully on the subject of Measles in my last report, to which reference may be made. The number of cases of whooping cough reported during the year by school teachers was 81, of measles 21. The cases of measles occurred chiefly at two schools, and in each of these schools the first patients had been in contact with measles patients from London.

DIARRHŒA.

During 1905, the number of deaths certified under the various headings which are now classed as Epidemic or Summer Diarrhœa was 44. Of these, 33 occurred under one year of age and 5 over 20 years of age. Two of the deaths occurred in the Children's Hospital, the patients having been admitted from outside Brighton. In addition 26 deaths were ascribed to Enteritis, of which 18 were under one year of age. The seasonal incidence of these deaths is shewn in the table on page 16. The close resemblance between the seasonal incidence of the two, supports the view that in the main they are one disease.

In the following Table the deaths from diarrhoea are given in terms of the births, as being the nearest approach to the infantile population among whom the deaths from diarrhœa chiefly occur.

	Deaths per 1,000 Births.		Deaths per 1,000 Births.
1891	15·5	1899	62·5
1892	23·0	1900	32·2
1893	29·2	1901	28·9
1894	17·0	1902	16·3
1895	33·7	1903	16·4
1896	24·1	1904	18·3
1897	28·8	1905	15·2
1898	42·7		

Effect of Meteorological Conditions.—The weather conditions of the summer doubtless favoured a low death-rate from diarrhœa, being somewhat similar to those in the two preceding summers. In the five months June to October in the three years 1903-05, the number of deaths from diarrhœa was 45, 48 and 30 respectively. The inches of rainfall in the corresponding periods of these three years were 18·9, 7·2 and 10·8, the number of rainy days 84, 60 and 64; the mean temperature of the air 58·9°, 59·6° and 57·7°. The 4 ft. earth temperature reached 56° F. on June 1st in 1903, on the 12th in 1904, and on the 15th in 1905. The diarrhœal mortality shewed no relationship to this fact.

Food and Diarrhœa.—As repeatedly shewn in these reports diarrhœa is most often fatal in hand-fed babies. To test this point, the inspectors in their house-to-house visits in all the industrial districts have, during the past three years, noted the method of feeding of each baby under one year of age in the house under visit. The results for these three years are set forth in the first four columns of the following table. The information, especially during last year has been very carefully collected. The contrast between babies who are suckled only and hand-fed babies in respect of diarrhœa is very striking.

Methods of Feeding Infants under One Year of Age in Brighton.

	A.—Census of 10308 Houses in house-to-house inspection in the 3 years, 1903-05.				B.—Infants who died from Epidemic Diarrhœa in the 3 years 1903-05.			
	Age of Infants in Months.				Age of Infants dying in Months.			
	0-3	3-6	6-9	9-12	0-3	3-6	6-9	9-12
I.—Suckled only	271	237	186	92	5	3	—	—
Ditto and farinaceous food	14	29	41	69	1	1	—	1
Ditto and cow's milk ...	5	6	7	4	1	—	—	—
Ditto and condensed milk	3	6	7	1	1	—	—	—
II.—Cow's milk only ...	12	32	28	18	11	22	7	4
Ditto and farinaceous food	4	26	33	33	1	—	4	6
III.—Condensed milk only ...	6	12	10	11	2	16	12	7
Ditto and farinaceous food	2	6	10	7	—	3	—	1
IV.—Farinaceous food, including patent food only mentioned, or same food as parents	4	1	2	18	1	1	—	—
V.—Unknown	—	—	1	5	2	4	2	2

The full significance of these figures can be more easily recognised when they are thrown into percentages as in the following Table :—

PERCENTAGE OF INFANTS UNDER ONE YEAR OF AGE FED IN DIFFERENT WAYS.

	A.—In 10308 houses visited house to house (1259 infants).	B.—Among Infants dying from Epidemic Diarrhœa (122 infants).
I.—Suckled only	62·3	6·5
Ditto and farinaceous food ...	12·1	2·5
Ditto and cow's Milk	1·8	1·7
Ditto and condensed milk ...	1·4	0·8
II.—Cow's milk only	7·2	36·0
Ditto and farinaceous food ...	7·6	9·1
III.—Condensed milk only	3·1	30·3
Ditto and farinaceous food ...	2·0	3·2
IV.—Farinaceous foods only mentioned	2·0	1·7
V.—Unknown	0·5	8·2
	100·0	100·0

In this table the babies are stated in proportion to the kind of feeding and the corresponding proportion of deaths from diarrhœa. The main items are three ; the remaining items may be ignored as representing only small figures. These three are as follows—(1) *Breast fed only :* these babies had only about *one-tenth* of the number of deaths from diarrhœa that ought to have occurred, had the deaths from diarrhœa been evenly distributed among all the babies.*

(2) *Fed on Cow's Milk :* these babies had *five times* as many deaths from diarrhœa as they ought to have had on the same supposition.

(3) *Fed on Condensed Milk :* these babies had *ten times* as many deaths from diarrhoea as they ought to have had on the supposition of equal distribution of deaths.

If it be assumed that methods of feeding exercise a predominant influence on the health of babies it follows that it is nearly twice as dangerous to feed an infant on condensed milk as on fresh cow's milk ; while it is nearly fifty times as dangerous to feed an infant on cow's milk and a hundred times as dangerous to feed an infant on condensed milk as on mother's milk. It should be noted that the condensed milks were nearly always sweetened milk, of what are usually regarded as the best brands.

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* This is on the highly probable assumption that the sample infantile population enumerated in the first four columns of the table on page 26 is fairly representative of the population among which the deaths from diarrhœa occurred.

In view of the importance of this subject a limited bacteriological investigation has, during the past year, been carried out on condensed milks in the municipal laboratory with the results shewn on page 44 *et seq.*

Amount of artificial feeding.—Condensed and fresh cow's milk being so much more dangerous than breast feeding for infants, special interest attaches to the fact that out of 1,259 infants found in visits among the poor 978, or 77·6 per cent. were breast-fed, or breast-fed along with other food, and 62·4 per cent. of the total number were breast-fed only. This refers to the whole of the first year of life. If we confine our attentions to the first six months of life 75·1 per cent. of the total babies had no food except the breast, and during the next three months of life 57·2 per cent. were breast-fed only. These figures are much more satisfactory than one's preconceptions. A certain allowance must be made for mothers unable to suckle their babies; when allowance for this and for other unavoidable difficulties is made it is satisfactory that three out of every four mothers in the poorer houses of Brighton carry out the first duty of motherhood during the first six months of their babies' lives. Unfortunately we have no corresponding figures relating to say twenty years earlier for comparison. Apart from the laudable ambition of all right-minded mothers to fulfil the duty of motherhood, there is the additional motive that breast-feeding is cheaper than feeding on condensed milk, and still more so than feeding on fresh cow's milk or any of the patent foods which are so harmful. It is probable that there has been much exaggeration as to diminution of breast feeding among the masses of the population.

Breast-feeding and Diarrhœa.—We have seen that 75·1 per cent. of the babies under six months of age are fed exclusively from the breast. We have seen also that breast-fed babies under six months of age have 10·7 per cent. of the total deaths from diarrhoea, or one seventh the number they should have on the supposition of uniform distribution of such deaths. Breast-feeding is thus an immense safeguard against death by diarrhoea. It is not a total safeguard, which is not surprising if, as urged in several of my past annual reports, domestic infection in the main is the cause of diarrhoea. Breast-fed babies may suck infective organic matter apart from food, for instance from dirty fingers, from dirty dummy-teats and in other ways.

The teaching of the tables on pages 26 and 27 is not exhausted by the preceding remarks. Special importance attaches to the babies aged 6 to 9 months. If these are breast-fed it is certain that they have had the advantage of being breast-fed from birth. There were 241 such babies aged 6 to 9 months among the total 325 total babies of these ages found in house-to-house inspections. But of the total 25 deaths from diarrhoea at ages 6-9 months in the three years 1903-05, not one occurred among breast-fed babies, or babies in whom breast-feeding was used along with other food. The importance of continuous breast-feeding could not be more forcibly shewn than by these figures. Attention has already been drawn to the advisory cards on this point which have been freely distributed among mothers (printed on page 11).

The above facts as to the babies aged 6-9 months naturally open up the question of the relationship of breast feeding to the death of the 8 babies who were breast-fed only and the 4 other babies partially breast-fed who died from diarrhoea in the last 3 years. One conclusion is justified and a second suggested. (1) As mother's milk is sterile, milk is not the only vehicle for the infection of diarrhoea (2) Among the artificially fed babies it is possible, and even likely, that the milk or other artificial food was not the sole vehicle of infection. The effect of artificial feeding must be regarded as complex. Artificial foods at their best do no more than than approximate breast-milk in nutritiveness and digestibility. The baby thus fed is made ready for any outside infection by indigestion and by the catarrhal conditions of the alimentary canal provoked by unsuitable food. The bottles and tubes used in artificial feeding and the storing of milk and of condensed milk after the can is opened, lead to domestic infection by means of dust and flies, in these babies thus enfeebled by artificial feeding.

The case of condensed milk is particularly instructive.

The special dangers of Condensed Milk for Infants.—This danger does not arise from the cheaper brands of condensed milk being chiefly used, and therefore not from the use of machine-skimmed milks, which would doubtless be still more injurious. During the three years 1903-05, 36 babies fed solely on condensed milk died from diarrhoea. Of these 33 were fed on Nestle's, one on Gallias condensed milk, 1 on condensed milk of the Milkmaid brand, and one on condensed milk of an unknown brand.

It is likely that the use of such a highly sugared food is detrimental to infants fed on it alone, and it is well-known that preserved foods if taken alone may cause scurvy-rickets. This is liable to happen whether babies are fed solely on patent foods or on condensed milk. These facts do not appear alone to suffice to explain the greater liability to diarrhoea of babies fed on condensed than of those fed on fresh cow's milk. Nor do the laboratory results detailed on page 44 clear up the matter. In original bacterial contents, condensed milk compares favourably with fresh milk. In attraction for flies and in exposure to dust in the home it compares very unfavourably with fresh milk. The evidence all confirms the conclusion formulated in my Annual Report of 1899 and in subsequent reports that both in relation to condensed and fresh cow's milk, the infection of diarrhoea (just as in infants fed by the breast or by patent food without cow's milk) has a domestic origin, and is due to domestic dirt.

More attention has been paid in recent years to the cleaning of yards and to the more frequent removal of house refuse. Still further stringency is required in the regulation of stables and mews. In the essential question of scrupulous domestic cleanliness, much still remains to be done.

Addendum.—It is conceivable that the excess of diarrhoea among babies fed on condensed milk might be at least partially owing to the fact that condensed milk is cheaper when diluted as directed on the tins than fresh cow's milk. This might conceivably have led to its being used to a greater extent by extremely poor mothers, in whose houses the sources of domestic contamination would be likely to be more abundant than among those who are better off. A detailed investigation of the 96 babies dying from diarrhoea during 1902-05, who were fed wholly or partially on condensed or fresh cow's milk does not show any excess of poverty among those fed on condensed milk. The table on page 26, shows that about three times as many babies were fed (in houses visited apart from sickness) on fresh milk as on condensed milk. This must be borne in mind in the following examples of social position among babies dying of diarrhoea :—

Deaths from Diarrhœa in the babies of	Condensed Milk.	Cow's Milk.
Labourers	6	10
Domestic Servants	5	7
Artizans	8	15
Persons above artizan class ...	5	8
All others	17	15
	41	55

TUBERCULAR DISEASES.

In the following table the registered death-rate from pulmonary tuberculosis or phthisis and from other tubercular diseases for a series of years is shewn :—

Mean Annual Death-Rate in Brighton from Phthisis (Consumption) and other Tubercular Diseases per 100,000 persons in Groups of Years.

	Phthisis.	Other Tubercular Diseases.
Ten years, 1861-70	295	98
Ten years, 1871-80	247	78
Ten years, 1881-90	193	74
Four years, 1891-94	150	82
Four years, 1895-98	149	63
Four years, 1899-1902	140	44
1903	145	52
1904	136	67
1905	135	54

Owing to the fact that a larger proportion of the Brighton population than that of England and Wales is at the ages most susceptible to phthisis, a correction factor ·9267 is needed. When this is multiplied into the above death-rate, the corrected death-rate is 126.

In my last report I drew attention to the value of segregation of advanced cases of phthisis in the infirmary in the prevention of infection, and I have read papers discussing the same subject from a wider standpoint at the Paris Congress and the Epidemiological Society. During 1905, 29 of the total deaths from phthisis or 16·8 per cent. occurred in large institutions. The average number of days spent in the Workhouse Infirmary by patients having phthisis during the eight years 1897-1904 was 221 days, including those still in the Infirmary, or 175 days without these.

NOTIFICATION OF TUBERCULOSIS OF THE LUNGS (PHTHISIS).

Voluntary notification of phthisis by medical practitioners was begun in January, 1899, no payment being then made for such notifications. Between that date and September 11th, when the new arrangement came into operation to pay for each case of phthisis notified, in private practice 2s. 6d., and in public practice 1s., 70 cases were notified. The course of notification is indicated in the following Table:—

Year.	No. of New Cases Notified.	No. of Cases Re-notified.	New Cases Notified per 100,000 of Population.	No. of New Cases Treated in the Borough Sanatorium.	No. of Annual Deaths from Tuberculosis in Brighton.
1899	111	—	92	—	215
1900	105	—	85	—	232
1901	153	9	124	—	237
1902	224	52*	179	31 (from May)	227
1903	316	82†	251	98	248
1904	363	85‡	286	130	259
1905	308	102**	242	129†	241

It would appear as though we had reached the high-water mark of notifications under our present voluntary system. This being so, it is interesting to compare the number of notifications with those obtained in other towns having a similar system and in Sheffield, in which since November 1903 the notification of cases of phthisis has been made obligatory.

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† Not including 6 re-admissions.

* 17 of these had been originally notified prior to, and the rest in, 1902
† 37 ,, ,, ,, ,, ,, ,, 1903.
‡ 36 ,, ,, ,, ,, ,, ,, 1904.
** 59 ,, ,, ,, ,, ,, ,, 1905.

New Cases of Phthisis notified per 100,000 of population in—

	Brighton.	Sheffield.	Manchester.	Liverpool.
1904	286	281	215	236
1905	242	168	223	248
For every 100 deaths from Phthisis in 1904 the number of new cases of Phthisis notified was	209	160	119	116

The falling off of notifications in Sheffield and the slighter falling off in Brighton are doubtless due in part to the fact that chronic cases of phthisis have already been notified, and that recent notifications contain a larger proportion of recent cases than formerly.

Details as to Notifications.—The preceding table gives comparative statistics for seven years. Re-notifications occurred in 102 instances in 1905, 73 cases being re-notified once, 22 twice, 6 three times, and 1 seven times during the year.

During the year, 438 notifications of consumption were received, 98 in private practice, 180 in public practice, 97 reported by relieving officers, 10 by relatives, 38 by the Master of the Workhouse, 15 by the Medical Officer of Health. The fees paid for notification were £25 3s. 6d.

Stage of Disease at which Notification occurs.—Eight cases were notified less than a week before death, 13 between 1 and 4 weeks before death, 15 from 1-2 months, 7 from 2-3 months, 6 from 3-4 months, 6 from 4-6 months, and 6 from 6-12 months before death. In accordance with the circular letter to practitioners, the notification of moribund cases is deprecated, and fees are not payable for such cases. Of 308 total cases notified for the first time during 1905, 70·8 per cent. are still alive (February 13th, 1906) as compared with 50·3 per cent. of the cases notified in 1904 on February 22nd, 1905.

Proportion of the Disease imported.—Brighton being a health resort, it receives a large number of inhabitants in failing health, not only among the well-to-do, but also among small shop-keepers and the industrial classes, who hope under the favourable conditions of Brighton to regain their health.

Of the 172 deaths from phthisis in 1905, the disease was already present in 34 when the patients came to Brighton; 11 of these patients were notified before death.

Of the 308 notified cases, 31 in addition to the above 11 fatal cases, were already ill when they came to Brighton. Thus the total known imported cases in the year was 65.

Of the 69 deaths from other tubercular diseases, 11 were definitely ill on arrival in Brighton.

Thus, in about 19 per cent. of the deaths from consumption and 14 per cent. of the notified cases of this disease, the illness was acquired elsewhere than in Brighton.

Of the 308 cases notified during last year, 59 died at home, 6 in the Workhouse Infirmary (as well as 16 unnotified cases), and 23 have left the town, and 13 have gone to unknown addresses.

Notifications of *changes of addresses* were received respecting 20 patients, enabling prompt disinfection to be done. In 9 other instances notified patients removed once, and in four instances notified patients removed twice during the year, and disinfection was done, but owing to lack of notification not always promptly.

Disinfection.—In 161 notified cases houses were disinfected after removal of the patients to the Sanatorium or elsewhere. In 134 instances rooms, and in three instances the whole house, were sprayed with formalin. In 11 instances walls of rooms were stripped, cleansed and ceilings whitewashed, and in 25 instances this was done for the whole house. In 46 instances the rooms, and in 16 instances the whole house, were thoroughly cleansed by the tenant or owner; in 22 instances the bed ticks, &c., were washed by the tenants, and in 127 instances the bedding and clothing were disinfected by saturated steam under pressure.

After deaths from Phthisis and other tubercular diseases disinfection was carried out in 158 houses. In 130 cases rooms were sprayed. In 75 instances rooms, and in five cases the whole house, were stripped, cleansed and whitewashed, in 33 instances the rooms were thoroughly cleansed. In 17 cases the bedding or clothing was burnt, in 74 the bed ticks, &c., were washed, and in 119 the bedding was disinfected by steam. Personal apparel was similarly treated.

The sanitary defects found and remedied in connection with visits to cases of and deaths from phthisis and other tubercular diseases are given in other tables.

CO-ORDINATION OF LOCAL MEASURES AGAINST TUBERCULOSIS.

Questions are frequently asked as to measures adopted in Brighton against tuberculosis, and for this reason, as well to place on record an annual statement of what is done, I take this opportunity of stating our methods of action, to some extent in chronological order in accordance with the length of time during which they have been practised.

1. *Disinfection of bedrooms in which phthisical patients have died.*—The procedure adopted commonly includes spraying with formalin vapour, stripping and burning the wall paper, and steam disinfection of bedding, carpets, &c., followed by scrubbing and cleansing of walls and floors. The number of houses thus treated in 1893 was 56, the number of disinfections after death from phthisis in subsequent years being equal to the number of deaths from that disease.

2. *A sanitary inspection* of the house in which the fatal case occurred has been made, and any defects discovered have been remedied.

3. *A system of voluntary notification of cases* of phthisis was organised in January, 1899 (see page 31). The number of cases notified under this system, as shewn on page 31, is larger in proportion to population than in any other English town. For the success of this work, we are largely dependent on the co-operation of the medical staff of the County Hospital, of the Children's Hospital, and of the public Dispensaries and Poor-Law, as well as a number of private practitioners. To private practitioners a fee of 2s. 6d. and to those engaged in public practice a fee of 1s. for each notified case is given. A number of cases are also notified by relieving officers and others. The distribution of the cases in regard to private or public practice is shewn below for each year:—

	1905	1904	1903	1902	1901	1900	1899
Number of Notificacations of Phthisis							
Private Practice...	98	93	78	62	51	48	113
Public Practice ...	180	233	218	128	80	56	
By Medical Officer of Health	15	8	6	1	—	—	—
By Relieving Officer and Master of Workhouse .	135	118	100	75	29	—	—
By relatives	10	13	12	16	2	—	—

4. Action has not been confined to notified cases. Many doctors who do not wish to notify their patients, arrange for disinfection, and use the "*Precautionary Cards*," which are supplied free.

5. *The examination of sputum is done gratuitously* for all doctors in the town in our municipal laboratory. The address of the patient is asked for respecting each sputum, but the patient is not regarded as having been notified, unless the doctor has the consent of the patient to do this, and the only action necessarily resulting from the

examination of the sputum, is that the family practitioner is in a position to urge precautionary measures on his own part. These examinations were begun in 1897, and the appreciation in which they are held is shewn in the following table :—

Table showing the Number of Specimens of Sputum examined in the Municipal Laboratory.

Year.	Town.	Sanatorium.
1897-98 (14 months)	21	—
1899	47	—
1900	86	—
1901	125	—
1902	146	23
1903	227	111
1904	284	188
1905	279	104

The number of town specimens is practically the same in 1905 as in 1904. Early this year the system was started of examining three samples of every specimen of sputum submitted for examination, instead of two as before. This has resulted in a higher percentage of positive certificates, and a diminished necessity on the part of the practitioner to send further specimens from the same patient.

6. *Every notified case is visited at home* by the house physician of the Sanatorium, and the history of the illness is obtained, and full particulars on all points bearing on the origin and prevention of infection are noted. A very large proportion of these cases are also *interviewed* a second time by me *at the Town Hall*, in connection with their proposed admission to the Sanatorium, and further facts bearing on preventive measures thus obtained.

7. Each patient has given to him a card detailing "Precautionary Measures," and *exact verbal instructions are also given for the prevention of infection* by spitting or coughing.

8. *Japanese handkerchiefs and pocket spit-bottles* are also provided gratuitously to those patients requiring them.

9. *The patient is subsequently visited at three-monthly intervals* by a Sanitary Inspector, Mr. Ward, who has carried out this work tactfully and skilfully. At these visits the condition of the patient and of the house is ascertained, and special enquiry is made as to whether any other members of the household suffer from cough with the object detailed under heading 16.

10. The action taken in regard to the patient's house varies according to circumstances. Disinfection is done whenever any change of address is known, and any defects are remedied.

11. There is no interference whatever with the patient's occupation, or with his method of spending his evenings. Without in any way revealing knowledge of the patient's occupation, opportunity is taken to make an independent *visit to the shop or workshop* in which he is engaged. Nearly every factory and workshop, as well as all the public houses, and many other public places have tablets to the following effect displayed in each workroom :—

PREVENTION OF CONSUMPTION.

You are
Earnestly Requested
to abstain from the
Dangerous habit of
SPITTING.

The same remark applies to public houses, music halls, tram waiting-rooms, and places for lounging on the sea front, &c.

In certain factories, upholsterer's workshops, &c., the conditions as to dustiness have been greatly improved.

12. When re-visiting phthisical patients in the early days of notification, I became aware that a considerable number of them did not carry out the instructions given them as to spitting. The habits of a lifetime could not be uprooted by ten minutes' conversation. It was this experience which led me in 1902 to urge the Sanatorium training of patients, and since then ten beds in a detached part of our Isolation Hospital have been reserved for this purpose, and as will be seen from the table on page 31, we have passed through our wards up to the end of 1905 388 patients. Each of these has received Open-Air Treatment for at least a month, and has received a thorough drilling in the hygienic treatment of his disease, especially on the use of the pocket spit-bottle. I regard this as the most important work in the struggle against tuberculosis which we have yet effected.

13. A large proportion of the cases admitted to the Sanatorium are too advanced for cure. They improve in health, and the public gain by the increased safety which they have secured. But eventually some of these patients relapse, become confined to the house, and at last bed-ridden. Then a certain proportion of them drift into the Workhouse Infirmary. It was the investigation of these cases which led me in the first instance to realise *the importance to the public safety of this refuge for advanced consumptives.* There is every reason to think

that the advanced cases are the most infectious of all, in part because they are too weak to be as cleanly as before. It is therefore a matter of supreme importance that about 20 per cent. of the total deaths from phthisis in Brighton occur in the Infirmary, and that the phthisical patients there during the last 8 years spent on an average 221 days each in the institution.

14. *Further extension of accommodation for the treatment of advanced cases*, and particularly of *non-parochial* cases, is urgently needed both for humanitarian and preventive reasons. It will be partially provided when the scheme under the Hedgcock Bequest is completed.

15. It will be noted that in the above scheme of municipal action *the more protracted treatment of early curable cases* is excluded. This omission will be remedied under the above scheme, by setting apart a number of, probably ten, beds for such patients. I must confess, however, that my administrative experience of phthisis leads me to attach much more importance to the Sanatorium training of patients and to the institutional treatment of advanced patients than to the cure of early patients, though this also is important.

16. *Early Medical Diagnosis.*—During 1905 our preventive measures have received an extension to which I attach much importance. At both the first and subsequent visits to notified cases, careful inquiry is made as to any evidence of illness in other menbers of the same household. If such evidence is found, a letter is sent to the family practitioner if the patient can afford to pay a doctor. If not (and the majority of our patients come from hospitals and dispensaries) the new patient is referred to the institutional doctor. The help which can thus be given has been greatly increased by my having had placed at my disposal a considerable number of out-patient letters for the County Hospital. By this means early medical treatment has been secured for many consumptives who might otherwise have been neglected. Each patient sent to the County Hospital is carefully overhauled, and one has confidence therefore that in patients thus examined and treated, early evidence of disease is not overlooked. I hope that we may in 1906 extend this means of detecting early phthisis and securing early treatment on a considerable scale.

17. The Charity Organisation Society and a number of private friends have given most valuable assistance by providing *help for patients discharged from the Sanatorium*, and by passing on suitable patients to other institutions where they could secure more protracted treatment. The after-treatment of patients and the *finding of suitable light work* are two of our greatest difficulties, and I do not at present see what can be done officially in these directions, though there is

ample scope for private philanthropy. In time the matter will settle itself, for with the diminution of the sources of infection through the training of consumptives and the segregation of advanced cases there will be, twenty years hence, a much smaller number of patients needing after-treatment or special occupations. Meanwhile there is much need under these headings.

The preceding 17 paragraphs give an imperfect sketch of our local efforts to organise and co-ordinate efforts for reducing the death-toll from phthisis. One naturally at the end of such a sketch considers what more could be done.

What more could be done? Much more could be done if we knew of every case and knew of it at an early stage of the disease. Would compulsory notification of phthisis help us? I think it would, though the consideration of this point may be postponed for a year or two. It is noteworthy that in Sheffield which has a system of compulsory notification of phthisis the number of cases notified was only 100 for every 65 deaths, while in Brighton it was 100 for every 56 deaths from phthisis during 1905. The clue to this difference is to be found in our Sanatorium provision. Most good can be done for cases among the working classes, and these cases are unhappily not recognised in a very large proportion of cases until the disease has become fatally established, and until much mischief has been done among fellow-workmen. If a skilled overhauling of each patient with persistent and repeated cough could be secured, much earlier diagnosis would be practicable. As matters now stands, large numbers of consumptives are treated winter after winter for "bronchitis," examination of the chest being exceptional and rare in certain classes of practice, and specimens of sputum being seldom submitted for examination.

SYPHILIS.

During 1905, the deaths of five male and five female infants under one year of age, and of one man and two women, were returned as due to this cause. The death returns under this head are immensely understated.

ALCOHOLISM.

During 1905, five deaths of men and four of women were returned as caused by alcoholism or delirium tremens. The deaths of 11 men and 10 women were returned as due to cirrhosis of the liver.

For further remarks on alcoholism, see page 15. The public health aspects of alcoholism as a chief factor in the production of premature old age and poverty were first commented on in my annual report for 1896, and each year has convinced me more and more of its immense importance as our chief social evil.

REGISTERED DEATHS FROM CANCER.

Seat of Primary Disease.	Sarcoma.		Carcinoma.		Malignant Disease or Cancer.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.
Head, Face, Eye, Orbit, Nose, Ear	—	—	1	1	—	2	1	3
Jaws	—	—	—	1	1	—	1	1
Skin	—	—	—	—	—	—	—	—
Axilla	—	—	—	—	—	—	—	—
Mouth. Tongue, Lips	—	—	2	—	4	—	6	—
Neck, Throat, Tonsils, Larynx ...	1	—	2	—	4	1	7	1
Lung, Chest, Mediastinum, Heart	—	1	1	—	—	—	1	1
Œsophagus	—	—	2	—	1	2	3	2
Breast	—	—	—	10	—	11	—	21
Abdomen	—	—	1	1	1	2	2	3
Stomach and Pylorus	1	—	4	5	9	6	14	11
Liver and Gall Bladder	—	—	4	2	4	2	8	4
Peritoneum, Mesentery, Omentem	—	—	—	—	—	—	—	—
Pancreas	—	—	1	—	—	—	1	—
Spleen	—	—	—	—	—	—	—	—
Intestines (excluding Rectum) ..	—	—	1	6	—	3	8	9
Rectum	—	—	2	3	6	2	—	5
Uterus	—	—	—	18	—	10	—	28
Ovaries	—	—	—	—	—	1	—	1
Vulva	—		—	—	—	3	—	3
Pelves, Kidney, Bladder, Prostate Urethra, Penis	—	1	1	—	4	2	5	3
Spinal Cord	—	—	—	—	—	—	—	—
Groin, Leg, Foot	—	1	—	1	—	1	—	3
Parts unspecified	2	—	1	1	—	—	1	1
Total	2	3	23	49	34	53	59	100

The total number of deaths registered as due to the various forms of cancer was 159 last year, as compared with 179, 143, 150, 132, 96, 135 and 114 in the six preceding years. Of the number in 1905, 28 occurred in the Workhouse, 16 in the County Hospital, 1 in the Children's Hospital, and 1 in the Throat and Ear Hospital.

RHEUMATIC FEVER.

During 1905, the number of deaths registered as caused by this disease was six.

The number of cases of this disease annually admitted to the County Hospital gives a better idea of the varying amount of this disease, and the following Table is therefore inserted at this point:—

	Number of Admissions to the Sussex County Hospital of patients suffering from		Brighton. Number of Deaths from Rheumatic Fever and Rheumatism of Heart.
	Acute Rheumatism.	Sub-Acute Rheumatism.	
1900	60	8	9
1901	44	11	9
1902	47	12	5
1903	22	8	5
1904	40	10	6
1905	18	10	6

PUERPERAL FEVER AND ACCIDENTS, &c., OF CHILDBIRTH.

During 1905, four deaths from puerperal fever were registered, and two to other diseases of child-birth and pregnancy. Nine cases of puerperal fever were notified during the year.

THE ADMINISTRATION OF THE MIDWIVES' ACT, 1902.

Under this Act, the names of 85 midwives are given in the Midwives' Roll for 1905, as living in the County Borough of Brighton, and 27 in Hove. Of the above 112, twelve gave their address at the Brighton Infirmary. At that time a number of midwives were being trained there. At present only two midwives are employed at the Infirmary. Six were working in connection with the Lying-in Institutions (two in Hove), four at the County Hospital, five Queen's Nurses, and four at a private nursing institution. Only the Workhouse and Lying-in Institution midwives are actively engaged in midwifery (six in Brighton), and these attended last year 785 confinements, or about 27 per cent. of the total births in Brighton. The fact that this large number is attended by competent trained midwives, reduces considerably the necessary scope for official supervision. We have no data as to what proportion of the remaining 2,126 births in Brighton are attended by the 81 midwives living in Brighton and Hove and probably practising to some extent in both towns, and what proportion by medical men. Up to the end of 1905, 23 midwives have notified to the Local Authority their intention to practise as midwives within the County Borough. Up to the middle of February, 1906, only 11 of the above 23 have, in accordance with sec. 10 of the Midwives' Act, given notice of their intention to continue to practise within the Borough. Of these, six are engaged in the work of the Lying-in Institution. This institution, during 1905, attended 785 maternity cases out of a total 2,911 births in the Borough.

Correspondence took place during the year with the Midwives' Board, as to the conduct of a nurse attending a malignant case of Puerperal Fever, but the Board held that the midwife in question was covered by the practitioner in attendance.

In accordance with sec. 8 (5) of the Midwives' Act, a copy of the names of all midwives who, during 1905, have notified their intention to practise in Brighton has been sent to the Midwives' Board.

No notifications have been received during 1905 (in accordance with Rule 18) as to deaths, still-births, or infectious diseases from midwives.

A circular letter has been sent to every midwife known to practise in Brighton (February, 1906) drawing attention to the requirements of the Act and the Rules under it, as to the keeping of books and notes of cases, and the notification to me of all cases under Rules 18 and 19. The opportunity has been taken to send a number of copies of the leaflets as to the Management and Feeding of Babies, with a promise to supply further copies as required.

WORK OF MUNICIPAL LABORATORY.

The work of this laboratory commenced in November, 1897. The work in connection with it has greatly increased, as shewn by the following Table :—

		1897-8 (14 mths.)	1899	1900	1901	1902	1903	1904	1905
Widal-Grüber Test for Enteric Fever...		164	153	95	88	103	106	98	92
Bacteriological Diagnosis of	Diphtheria	414	2033	2191	2962	2537	3559	3107	2573
	Phthisis ...	21	47	86	125	169	338	472	383
	Ringworm	—	—	—	—	—	—	—	46

Diphtheria.—The specimens examined for diphtheria comprised 1,045 specimens from patients at home, many of whom were subsequently admitted to the Sanatorium, and therefore appear again in the hospital group next considered. Of the home specimens 65·1 per cent. were negative, 30·6 per cent. positive, 3·1 per cent. doubtful, and 1·2 per cent. showed no growth.

Of the total 1,528 hospital cases, 250 related to cases of diphtheria when first admitted. Of these, 30·8 per cent. failed, on admission, to show the diphtheria-bacillus. Before discharging a diphtheria patient, three, or at least two, negative swabs are obtained in every instance. 930 swabs were examined from patients about to be discharged. When any nasal discharge was present, nasal as well as throat swabs were examined.

Scarlet Fever and Diphtheria.—Every patient admitted with scarlet fever was examined, on admission, for the presence of diphtheria-bacilli, in accordance with our practice for several years. 348 swabs were examined from scarlet fever patients in the Sanatorium, and of these specimens 77 showed diphtheria-bacilli. These related to 33 patients. Of this number all, with one possible exception, had diphtheria-bacilli in their throats as well as scarlet fever, when admitted. Only 4 of these showed clinical signs which would have made one suspect the possibility of diphtheria. The examination enabled the patients with mixed infection to be at once separated from the unmixed scarlet fever cases, and thus probably prevented outbreaks of post-scarlatinal diphtheria. The presence of diphtheria-bacilli in the throats of so many children who do not suffer from diphtheria, and the fact that this coincidence, on such a scale, in my experience has only occurred at the end of a local epidemic of diphtheria, suggests the likelihood that, towards the end of an epidemic of this disease, many children become immunised by the antitoxins self-produced as the result of minute invasions of diphtheria-bacilli.

Enteric Fever.—83 specimens of blood were sent by practitioners, and the blood of 9 hospital patients was examined. Of the 83, twenty showed evidence of enteric fever.

Ringworm.—A new departure during 1905 has been the examination for practitioners of specimens of hair suspected to be infected with ringworm. This has been done to aid the early recognition of this extremely contagious disease, and thus secure the exclusion of the affected scholar from school; also to facilitate early treatment, and the earlier return to school than would otherwise be practicable.

During 1905, 27 specimens from the town were examined for ringworm, and 19 from patients when admitted to the Sanatorium for scarlet fever and diphtheria. Of the 27 town specimens, 16 were submitted by the school-nurse, as the result of her examination of suspected children at school.

Opsonic Index in Phthisical Patients.—Commencing in August, 61 patients in the Sanatorium were examined for opsonic index. This is a method of ascertaining the power of each patient's blood serum to aid the ingestion of tubercle bacilli by blood corpuscles of a normal person, as compared with the corresponding power of the serum of a normal person. Altogether 149 counts were made of specimens from drops of blood of the above 61 patients. The general results of these observations cannot as yet be fully stated; but they appear to indicate that the test will not be such a satisfactory means for estimating the prospects of each patient, as at first was anticipated.

Water Analyses.—Careful records are kept of all the analyses made of the water supply, and we are thus accumulating a long series of standard analyses for reference, by means of which any temporary departure from normal conditions can at once be checked. It need hardly be said that the water in use from each of the sources of supply is extremely pure. The number of analyses has been as follows:—

Number of Samples examined.	Chemically.	Bacteriologically.
Lewes Road	13	12
Goldstone	16	13
Mile Oak	12	14
Shoreham	12	13
Patcham	12	12
Total	65	64

Hardness of Brighton Water.—The remark so frequently made that Brighton water is exceptionally hard, indicates the desirability of an exact statement on this point.

The average hardness of each of the wells from which water was being supplied at the end of the year was, Shoreham 14·2, Patcham 13.1, Mile Oak 13·4, Goldstone 14·4 grains per gallon. This means that the Brighton water is no harder and is usually softer than the river water supplying London, and is much softer than the deep-well water with which some parts of London are supplied.

Miscellaneous Examinations.—Several specimens of urine were examined for typhoid-bacilli, one for gonococci, and other miscellaneous examinations were made.

An outbreak of enteritis in a cricketing team who had lunched together was investigated. The absence of Gaertner bacilli and allied organisms, which are often associated with such outbreaks was demonstrated. A paracolon bacillus was isolated from the ham eaten at the lunch which gave the following reactions; ferments glucose and lactose, no coagulation of milk but some acid formation, fluorescence in neutral red medium, no liquefaction of gelatine, indol freely produced, non-gram staining, motile. The investigation of the preparation of the food rendered it probable that infection was conveyed to the food by a servant who was ill at the time.

Examination of Milk.—During the year I arranged for Dr. Heggs to carry out at the Municipal Laboratory an examination of a number of samples of milk as to their bacterial contents, with the following results:—

Fresh Cow's Milk.—Two samples of milk were collected in sterile bottles July 16th, at noon, at the Central Station from churns having brought milk from farms A and B in West Sussex. At 4 p.m. (that is 24 hours after milking) these specimens were examined as follows:—Dilutions of each milk were made with sterile water, $\frac{1}{100000}$ c.c. of the milk then plated on gelatine and incubated at 20° C. After 48 hours milk A showed 65,300,000 organisms per c.c.; while milk B showed 200,000,000 organisms per c.c. The New York standard is that no milk should be sold containing, when 24 to 36 hours old, over 50,000 to 100,000 bacteria.

Condensed Milks.—Twelve varieties of condensed milk were bought from a Brighton grocer on a given date. Each tin was opened under sterile conditions, and 10 c.c. drawn from its centre by means of a water-exhaustion pump. Dilutions were made as above with sterile water by drawing this milk into a sterile bottle containing 90 c.c. of sterile water. From this dilution gelatine agar tubes were inoculated with ·1, ·2, and ·3 c.c. on gelatine, and ·2 and ·5 c.c. on agar. The incubation on gelatine was at 20° C and on agar at 37° C. Colonies were counted daily, and the count after four days accepted as final.

The results obtained are shewn in the following table:—

EXAMINATION OF CONDENSED MILKS.

A.—Number of Bacteria.

NAME OF MILK.	Date of Examina-	(1) Examination begun as soon as tin opened.		(2) Examination begun some days after tin had been left opened and exposed to air of laboratory.			Sweetened (S) or Unsweetned (U.) Milk.	Extracts from Remarks and Directions on the tin for use of the Milk.
		No. of bacteria found in 1 c.c. of the original milk at end of four days after incubation on		No. of days exposure.	No. of bacteria found in 1 c.c. of the original milk at end of four days after incubation on			
		Gelatine at 20° c. (1)	Agar at 37° c. (2)		Gelatine at 20° c. (3)	Agar at 37° c. (4)		
Nestle's ...	11-10-1905	230	120	7 days	360	720	S	Directions—1 to 9 of water for infants 4 months old.
Hit Brand	30-9-1905	280	484	3 days	183	1130	S	Machine skimmed. Directions—1 part to 5 of water.
Uncle Tom	1-1-1906	490	150	5 days	740	4000	—	Machine skimmed.
Milkmaid ...	3-11-1905	1300	600	7 days	1000	1200	—	Directions—Not less than 1 to 7 of water.
Posy Brand	9-12-1905	1360	21250	6 days	2700	not estimated.	—	——
GalliaBrand	1-11-1905	2560	2000	8 days	3250	1600	—	Label states "absolutely free from bacteria." Directions—1 part to 4 or 5 of water.
Horse Shoe Brand ...	14-11-1905	2570	3000	6 days	5630	6560	S	Machine skimmed. Directions—1 part to 5 of water for cooking.
Ideal Brand	4-10-1905	5450	4010	4 days	12800	5850	U	Label states it is *sterilised*. Directions—1 part to 2 of water.
Cup Brand	8-12-1905	5980	3300	6 days	15200	not estimated.	—	Machine skimmed.
Crown Brand ...	16-12-1905	8800	11800	6 days	40000	not estimated.	—	——
*Head Brand ...	1-12-1905	21800	44200	4 days	in 3 days 114740	in 3 days 128000	—	——
Tip Top Brand	16-10-1905	70940	7600	11 days	16500	not estimated.	—	Directions—1 to 7 to 14 of water.

*This milk was much less viscid than the others on the list.

B. Kinds of Bacteria.

(a) Examination for presence of bacteria of "intestinal type" (coliform organisms).—5 c.c. of a 1 in 10 dilution of each condensed milk was grown in McConkey broth at 42° C. None produced gas and acid. Most of them produced acid, and the most suspicious of these were examined for the above bacilli, but none found in this small amount of milk.

Further experiments were made as to coliform organisms in a tin of Nestle's milk. First the absence of such organisms from 19 c.c. of the milk was proved, the milk being at once incubated in McConkey broth after opening under sterile conditions and dilution. Secondly, 6 c.c. of the same milk diluted to 60 c.c. was incubated for 48 hours at 37° C and then examined for coliform organisms without finding any. It follows that there were no bacilli coli in 25 c.c. of the above tin of milk, although in 6 c.c. of the milk the multiplication of these organisms had been favoured by preliminary incubation as above.

(b) Examination for Bac. Enteritidis sporogenes.—Three specimens of 5 c.c. of a 1 in 10 dilution of each of eleven condensed milks were cultivated anaerobically. The characteristic reaction in sterilised milk from the above bacterium was obtained typically in three of these milks, and less characteristically in six others. In two no reaction occurred. On examining the above nine milk-tubes motile gram-staining bacteria morphologically like the above bacterium were found in six. Further pathogenic tests could not be made.

(c) On peptone solution and after incubation at 20° C and 37° C nearly all of the condensed milks showed numerous cocci and sporing bacteria.

C. As to Influence of Season.

A tin of condensed milk was opened and its contents examined immediately under the conditions recorded in col. (1) in the table on page 45. The open tin of milk was then placed in the incubator at 37° C, and the milk examined for number of bacteria, after having been subjected to a temperature much above summer heat for one, two, three, and four days. The results were as as follows:—

Bacterial Contents of Milk per c.c.

On opening the tin	1150
After one day's incubation	1370
,, two days' ,, ...	1160
,, three ,, ,, ...	1960
,, four ,, ,, ...	8960

D. Capability of Multiplication of added Bac. Coli in undiluted Condensed Milk at ordinary temperatures.

If the infection producing summer diarrhœa occurs domestically it is important to know whether condensed milk after being opened and before its dilution is a good medium for the multiplication of Bac. coli* which may have been introduced by flies or as dust. To test this point, the lowest spot at the bottom of a sterile test tube was inoculated with three loopsful of a broth culture of Bac. coli C and then 25 c.c. of the condensed milk from the same tin as was used in the above experiment (and which was shewn to have no Bac. coli in 25 c.c.) were drawn into this test tube by means of a water exhaustion pump. The experiment was so done that the Bac. coli in the test tube were necessarily imprisoned $2\frac{3}{4}$ in. below the surface of the added condensed milk. Aerial contamination of the tube was prevented, and its contents were incubated for 48 hours at 20° C. At the end of this time 1 c.c. was carefully drawn from the surface of the milk in the tube, diluted to 10 c.c. and inoculated on McConkey broth. A marked re-action occurred and Bac. coli were demonstrated. It follows that Bac. coli can readily multiply in condensed milk at ordinary temperatures; and the fact that in 5 c.c. of each of the milks enumerated in the preceding table no Bac. coli could be detected is strong evidence that they were sterile so far as this organism is concerned.

Summary of Results.—The two specimens of fresh cow's milk subjected in July to examination about 24 hours after milking, showed 65 millions and 200 millions of organisms per c.c., at the end of 48 hours incubation at 20° C. on gelatine. The worst of the twelve samples of condensed milk examined, at the end of four days incubation, after dilution under sterile conditions as soon as the tin was opened, showed at 20° C. on gelatine, 71,000 organisms per c.c. of condensed milk, which according to the directions on that particular can, should be diluted 1 to 7 before use. The condensed milk showing the least growth had only 230 per c.c., and the condensed milk showing the greatest growth of organisms on gelatine had only 71,000 at the end of four days.

So much for results representing the possibilities of growth of bacteria, which were present in the condensed milk before opening the tin. Columns (3) and (4) of the preceding table represent another set of facts. It may be assumed that under domestic conditions condensed milk receives considerable contamination after the tin is opened, and before its contents are consumed. The twelve tins of condensed milk were, therefore, left exposed to the air in the laboratory for the number of days indicated in each instance in the table ; and at the end of this interval the bacterial contents of each milk was tested as before. The results show that at the end of four days' incubation at 20° C. the number of bacteria with the exception of one brand (which was much less viscid than the others), was relatively small as compared with the number in fresh cow's milk, and the increase beyond the original count was also relatively small. On agar a similar result is seen.

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*It is assumed throughout that some form of Bac. coli may have causative relationship with diarrhœa, though this is unproved. This is the most common organism found when milk is contaminated by manure, &c.

It is evident therefore that condensed milk is a much less favourable medium for the multiplication of the bacteria contained in it than fresh cow's milk.

The limited examination as to kinds of bacteria made above does not show coliform bacteria in the small quantities of condensed milk, but shows spore bearing bacteria. The former are regarded by Délépine and the latter by Klein, as probably causing diarrhœa.

The experiment described on page 46 shows that in conditions which favour the multiplication of bacteria more than the ordinary conditions of a household, in which three days may elapse before the tin is emptied, the increase of bacteria is small when compared with the number found in fresh cow's milk. As the general facts and considerations given on page 29 of the present report, and in my Annual Reports from 1899 onwards, make it clear that domestic infection is the dominating cause of epidemic diarrhoea, and that condensed milk is more dangerous in this respect than cow's milk, we must look to the kind of contamination of milk, as affording the clue to the explanation of the discrepancy between bacteriological and clinical indications. Condensed milk is more attractive, both for dust and for flies, than fresh cow's milk.

PUBLIC ANALYST'S REPORT.

By MEREDITH WYNTER BLYTH B.Sc., F.I.C.

Report on samples analysed under the Sale of Foods and Drugs Act, during the year 1905 :—

Samples of	Number of Samples.	Adulterated.	Percentage of Adulteration.	Nature of Adulteration.
Milk	297	41	13·80	Abstraction of fat. Addition of preservatives or coal tar colours.
Butter	111	4	3·60	Addition of margarine Excess of water and preservatives.
Milk - blended Butter ...	5	5	100·00	
Margarine ...	7	0	—	
Cheese	9	0	—	
Lard	6	0	—	
Condensed Milk & Infants' Food	7	0	—	
Spirits	6	1	—	Excess of water.
Condiments and Spices... ...	22	0	—	
Sugar & Syrup	4	0	—	
Sausages and Potted Meats	9	6	66·66	Addition of preservatives.
Green Peas ...	2	2	100·00	Addition of copper salts.
Drugs	10	1	10·00	Camphorated oil, deficient in camphor.
Miscellaneous ...	8	0	—	
1905—Total ...	503	60	11·92	
1904— ,, ...	501	47	9·38	
1903— ,, ...	507	92	18·14	
1902— ,, ...	502	114	22·70	
1901— ,, ...	490	93	18·97	

Table showing total samples of milk collected, and proportion of watered and skimmed from 1900 to 1905 :—

		Total Samples.	Below Standard.	Per cent. below Standard.	Average per cent. of Fat.
Weekday Samples	Wholesale, 1900-1904	486	19	3·90	3·72
	,, 1905 ...	72	7	9·72	3·35
	Retail, 1900-1904 ..	687	84	12·22	3·52
	,, 1905	189	26	13·75	3·56
Sunday Samples	Wholesale, 1900-1904	24	—	—	4·02
	,, 1905 ...	12	—	—	3·45
	Retail, 1900-1904 ...	230	27	11·73	3·52
	,, 1905	24	1	4·16	3·56

Table showing all forms of adulteration, *i.e.*, water, deficiency of fat, colouring matter (except annatto) and preservatives in milk samples during 1904 and 1905 :—

		1905.			1904.
		Total Samples.	Adulterated.	Per cent. Adulterated.	Per cent. Adulterated (Total Samples 291).
Weekday Samples	Wholesale	72	7	9·72	2·56
	Retail	189	31	16·40	11·11
Sunday Samples	Wholesale	12	—	—	—
	Retail	24	3	12·50	22·22
	Total	297	41	13·34	11·34

Milk.—In my report for 1904, I was able to write that all forms of milk adulteration had diminished to a very marked degree, it is therefore all the more disappointing to report that during 1905 a greater number of samples fell below the recognized standards than in 1904. On the other hand the use of preservatives and coal tar dyes has been rare and the quantity of preservatives found small. The use of Annatto by retailers continues quite unabated, at least 80 per cent. of the samples from retail sources containing this dye.

The increase in the number of samples below the fat standard in 1905 as compared with 1904 is a fact worthy of careful attention. This deterioration in quality is especially noticeable in the wholesale or farmers' samples. The deficiency in fat in nearly every case was so small that in most cases no proceedings were taken, or when proceedings were taken they were unsuccessful.

This is a most unsatisfactory state of affairs, and one which will not be improved until the present state of the law is altered—indeed, unless some alteration be made, the natural result must be for all the milk as sold to the public to be "broken down" to the standard, or just below the standard.

The Board of Agriculture, in 1901, issued a regulation, stating that "where a sample of milk contains less than 3 per cent. of milk fat, it shall be presumed . . ., until *the contrary be proved* that the milk is not genuine . . .

It has been established that all a vendor of milk has to do to *prove the contrary*, is to show that the milk has been sold just as it came from the cow, no matter what be the composition of such milk. This regulation, and the legal interpretation of it, is a direct inducement to farmers to mismanage farms—poorly bred cows, badly fed or even diseased cows may give a substance deficient in fat which may be sold as milk, and the vendor cannot be touched under this regulation. If the farmer can supply the retailer with milk below standard, what chance can there be of a successful prosecution being instituted against a retailer?

The Board of Agriculture, apparently not satisfied with the harm done by fixing an inconclusive standard, and one lower than that recommended by the Departmental Committee (1901), on whose report the standard was presumably based, issued a circular letter on March 27th, 1905, to local authorities, practically inviting them to act as a preliminary court to inquire into, and find excuses for, any deficiency in the quality of any sample of milk. The objections to such a course, and its unfairness to the consuming public, are so many and so obvious, and have been dealt with so ably by others,* that I will make no more comment upon it than to say that it has not tended to encourage farmers to improve the quality of their milk.

What is wanted, and what would, I am sure, be welcomed by all honest milk producers and vendors, and they are the vast majority, is a hard and fast standard from which there should be no departure, and no excuse for failure to maintain. Such a standard, in my opinion, should be higher for the winter months than the standard (so called) at present in force; for those summer months when milk is naturally a little lower in fat, the standard might be kept at about 3 per cent. Until such a standard is fixed, I am convinced that the quality of milk will tend to deteriorate, and the honest milk producer and the consumer will suffer.

The need of a fixed standard is all the more necessary as arguments based on chemical and technical methods and even simple calculations are apt to confuse the mind of some magistrates. I say this with the less hesitation, as in two instances which lately came within my personal experience, the Bench was unable to appreciate the fact that 0·78 and 0·75 are less than 0·8.

Butter.—111 samples of butter were examined, of which four were found to be adulterated with margarine. One sample containing 15·8 per cent. of water had the microscopical and physical appearances of a "milk blended" butter.

The five samples of "milk blended butter" examined contained amounts of water varying from 26 to 30 per cent., and in every case contained an excess of borax. It is a great pity that the ingenuity of lawyers has prevented the possibility of prosecuting the manufacturers of these mixtures with any chance of success. Butter is the substance which of all others has received during the past few years the greatest attention from the scientific adulterator and small quantities of water, milk, water and albumin, as well as cocoa nut oil and palm nut oils, have been and are being worked into butters with considerable success. This success is due in part to the ease with which such mixtures may be protected by a label which as a rule completely misleads the purchaser as to the nature of the substance he is buying, and in part to the great difficulties which the complete analysis of butter fat presents to the analyst. Butter fat has a chemical composition which varies within somewhat wide limits, and cocoa-nut oil, when suitably prepared, presents many of the chemical characteristics of butter fat, so that the old methods of analysis have become unsatisfactory, and new methods have had to be devised. Fortunately the last year has given us one or two improved methods for the detection of these foreign oils, which it is hoped may in future tend to check this form of adulteration. The scientific adulteration of butter, as well as other foods, has increased very greatly both the work and the responsibility thrown upon Public Analysts.

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*Report to the Sanitary Committee of Newcastle-upon-Tyne on the Circular of the Board of Agriculture, 1905.

The President of the Board of Agriculture lately received a deputation from the Federation of Grocers' Associations of the United Kingdom on this subject of butter adulteration, and in answer to this deputation said he proposed as soon as possible to appoint a Select Committee to go fairly into the matter, and he hoped at no distant date that the Government would be able to bring a Bill in the House of Commons.

Spirits.—The only other samples which this year call for any criticism, are the samples of spirits analysed during the year. At the time of writing, it is being sought to establish by the Islington Borough Council that the term "whisky" should only apply to the spirit distilled in a pot still derived from malted barley, mixed or not with unmalted barley and wheat, or either of them. The analyst further lays down a standard of not less than "380 parts of impurities" (secondary products) per 100,000 fluid parts of absolute alcohol. Without discussing the merits of the case, which is still *sub judice*, it may be interesting to compare the samples taken at Brighton with the suggested standard of 380.

SAMPLES OF	Absolute Alcohol by value per cent.	Volatile Acids as Acetic Acid.	Ethers as Ethyl Acetate.	Aldehydes.	Furfural	Higher Alcohols.	Total.
Scotch Whisky A ...	44·86	5·5	31·5	16·0	4·0	156	213
Scotch Whisky B ...	44·86	5·5	35·5	20·0	4·0	156	221
Irish Whisky A ...	41·90	21·0	100·0	16·0	6·0	220	363
Irish Whisky B ...	42·45	4·0	42·5	Trace.	Trace.	Trace.	121·5

It may be seen that not one of these samples reaches the 380 standard, although Irish whisky A approaches it very nearly. Irish whisky B consisted probably of nothing except patent still spirit. While Scotch whiskies A and B, which are very similar in composition, probably contains large quantities of patent still spirit.

Only two samples of brandy were examined during the year, one of these gave an "ether value" of 105 (proposed standard 80), the other an "ether value" of 60, but was rich in higher alcohols. Both these were as far as could be judged from chemical analysis derived entirely from the grape.

M. Wynter Blyth.

THE BOROUGH ISOLATION HOSPITALS.

	Number of Patients suffering from the following Diseases :—									Fulking Grange.
	Scarlet Fever.	Enteric Fever.	Measles.	Diphtheria.	Erysipelas.	Chicken Pox.	Phthisis.	Other Diseases.	Total in Sanatorium	Small Pox.
Remaining in the Sanatorium, Dec 31st, 1904	24	1	—	46	—	4	10	—	85	—
Remaining in Fulking Grange, Dec. 31st, 1904	—	—	—	—	—	—	—	—	—	—
Admitted to Sanatorium during 1905	164	21	3	181	6	2	140	1	518	—
Total number treated 1905	188	22	3	227	6	6	150	1	603	—
Number discharged during 1905 ...	175	21	—	219	5	6	134	—	560	—
Number who have died in Sanatorium in 1905	1	1	—	3	1	—	3	1	10	—
Remaining under treatment on Dec. 31st, 1905	12	—	3	5	—	—	13	—	33	—

Of the above patients one scarlet fever and three diphtheria belonged to the Sanatorium staff.

The children of inhabitants of the Borough are not charged, but £171 15s. 2d. was charged for the maintenance of other patients in the Sanatorium, £29 6s. 7d. for Poor Law cases, and £9 3s. 4d. for disinfection.

The following table prepared by the Borough Accountant shows the expenditure for the year on the two hospitals. The total number of weeks spent by all the patients in the Sanatorium was 2,847, as compared with 3,167 in the Sanatorium and 3 in Fulking Grange in 1904. Of the total in 1905, Scarlet Fever patients spent 1,025 weeks, Diphtheria patients 1,069 weeks, and Phthisis patients, 610 weeks.

COUNTY BOROUGH OF BRIGHTON HOSPITALS.

EXPENDITURE—SANATORIUM—BEAR ROAD.

				£	s.	d.	£	s.	d.
Salaries and Wages—									
A. Newsholme, Medical Officer	£150	0	0						
Matron	90	0	6						
Nurses and Servants	1031	13	1						
Labour (Gardens)	208	14	9						
Ditto (forming roadways) ...	196	15	0						
				1677	3	4			
Repairs				374	11	3			
Erecting Consumptive Shelter				164	6	4			
Laying water main (proportion)...				64	4	11			
Fuel				697	19	5			
Electricity, £165 13s. 6d.; gas, £53 17s. 8d. ...				219	11	2			
Water				56	18	4			
Hose and fittings, £19 17s. 7d.; fire extinguishers, £25 4s.				45	1	7			
Sundry household goods, furniture and repairs...				314	16	11			
Provisions				1435	10	5			
Drugs and medical sundries				152	17	5			
Surgeon's fees				2	2	0			
Uniforms for matron, dresses for nurses and servants, hospital garments, linen, flannel and drapery goods				140	5	9			
Printing, advertising, stationery and stamps ...				38	2	5			
Rates, taxes and insurance				445	5	0			
Travelling expenses, cab hire, carriage, telegrams and sundries				12	17	2			
Garden seeds, tools, manure, &c.				48	16	3			
Telephone rent				8	17	0			
							5899	6	8
THE GRANGE, FULKING.									
Wages (caretaker)	£72	16	0						
Repairs and alterations	136	14	5						
Fuel	6	3	9						
Sundry household goods	11	5	1						
Travelling and miscellaneous expenses	1	0	10						
Rates and taxes	10	12	0						
Telephone rent	35	0	0						
				273	12	1			
							273	12	1
							£6172	18	9
Corresponding amount, 1904							£5683	18	10

SANITARY WORK OF THE YEAR.

SANITARY INSPECTION.

In the following Tables, prepared by Mr. Skinner, the Chief Sanitary Inspector, the work of the Sanitary Department is stated, so far as it can be given in tabular form :—

Inspections during 1905.

	Totals for 1905.	Totals for 1904.
Number of Streets Inspected	275	190
,, Houses and other Premises Inspected	15591	14058
No. of Complaints attended to	794	997
,, Visits to Slaughter Houses	2355	2793
,, ,, Cowsheds	43	38
,, ,, Bakehouses	420	466
,, ,, Dairies and Milk Shops	461	337
,, ,, Provision Shops	2963	1409
,, ,, Restaurants	144	122
Number of Day Visits to Common Lodging-Houses	156	161
Number of Night Visits to ditto	88	136
,, Visits in respect of Sickness	6400	7484
,, Visits to Disinfect Rooms	736	829
,, Visits for Removal of Bedding	597	636
,, Drains Tested by Volatile Test	56	72
,, Drains Opened for Examination	325	379
,, Visits for Sundry Purposes	4882	8106
,, Visits to look up Notices Served	7055	9188
,, Attendances at Police Court	32	29
,, Samples Collected for Analysis	502	501
,, Inspections of Stables	1753	1471
,, Wastes of Water Reported	59	48
,, Letters sent to Schools and Public Library	1382	1738
Meteorological Observations Taken	678	532
Visits to Schools	117	152
Number of Visits under Factory and Workshops and Shop Hours Acts	3557	3225
Drains Flushed	34	37
Circulars Delivered *re* Diarrhœa	10000	10000
Markets Committee, One Inspector	12 days.	10 days.
Visits to Houses Let in Lodgings (Day)	285	445
,, ,, ,, ,, (Night)	96	24
,, Offensive Trades	114	90
Smoke Observations	53	26
Contagious Diseases (Animals) Act	36	94
Visits to Ice Cream Vendors	154	65
Special Duty at West Sussex *re* Milk, Outbreak of Infection, One Inspector	13 days.	—

The sanitary inspections enumerated in the above Table have been followed by the serving of the notices given in the following Table. A very large proportion of the work is done on the strength of verbal recommendations or preliminary "warning" notices.

Notices served during 1905.

Nature of Notice.	Warning and Verbal Notices.						Final Notices.				Total number of notices complied with.	
	Number served.		Number complied with before service of final notice.		Number reported for final notice.		Number served.		Number complied with.			
	Owners.	Occupiers.	Owners.	Occupiers.	Owners.	Occupiers.	Owners.	Occupiers.	Owners.	Occupiers.	Owners.	Occupiers.
To drain into sewer and fill up cesspools	3	—	1	—	2	—	2	—	2	—	3	—
To relay drain and fill up cesspools	1	—	1	—	—	—	—	—	—	—	1	—
To relay drain	173	—	101	—	72	—	72	—	72	—	173	—
To repair drain or soil pipe	106	—	71	—	35	—	30	—	30	—	101	—
To trap drain	58	2	30	2	28	—	31	—	30	—	60	2
To cleanse and whitewash rooms	453	69	206	36	247	33	260	11	257	11	463	47
To clear drain or soil pipe ...	88	20	16	6	72	14	83	6	82	6	98	12
To clear, repair or cleanse closet. or repair flushing apparatus or pan	481	164	203	58	278	106	296	106	295	106	498	164
To repave yard or scullery	306	12	149	11	157	1	181	1	176	1	325	12
To abate other nuisances ...	916	65	472	50	444	15	515	14	499	14	971	64
To provide covered dust bins	738	8	281	5	457	3	443	1	429	1	710	6
To provide premises with a proper water supply ..	2	—	—	—	2	—	2	—	2	—	2	—
To cleanse premises and remove foul accumulations	61	493	16	231	45	262	21	290	21	290	37	521
To provide manure receptacles	14	—	5	—	9	—	9	—	9	—	14	—
To fill up underground manure pits	8	—	4	—	4	—	4	—	4	—	8	—
To provide W.C. accommodation	12	—	7	—	5	—	5	—	5	—	12	—
To cause waste pipes to discharge into outer air ...	25	7	17	7	8	—	23	—	21	—	38	7
To render damp walls with cement compo	57	3	19	—	38	3	57	—	54	—	73	—
To lay on water to closets...	5	—	5	—	—	—	1	—	—	—	5	—
To abate overcrowding ...	—	127	—	31	—	96	—	86	—	86	—	117
To discontinue to let or occupy cellar dwellings ...	—	5	—	5	—	—	—	—	—	—	—	5
To discontinue keeping animals so as to be a nuisance	—	145	—	35	—	110	—	114	—	114	—	149
To abate smoke nuisance ...	—	13	—	13	—	—	—	—	—	—	—	13
To cleanse and whitewash bakehouse	3	62	3	62	—	—	—	—	—	—	3	62
To cleanse and whitewash workrooms	—	26	—	21	—	5	—	1	—	1	—	22
Totals	3510	1221	1607	573	1903	648	2035	630	1988	630	3787	1203

Only one summons was necessary to enforce compliance with notices during the year. This was in respect of a smoke nuisance. An order was made on the defendant to prevent the recurrence of the nuisance and to pay the costs of the proceedings.

COMMON LODGING HOUSES.

Ten are at present registered, having accommodation for 298 lodgers.

The Bye-laws have been properly carried out in these houses during the year.

HOUSES LET IN LODGINGS.

Bye-laws for houses of a rateable value not exceeding £26, and having four families in them if the landlord lives in the house, were confirmed by the Local Government Board, on July 13th, 1898. Eighty-five such houses are now on the register, as compared with 82 at the end of 1904.

There has been no breach of the Bye-laws respecting these houses during 1905.

ENQUIRIES RESPECTING VAGRANTS.

An application having been made by the Home Office for a statement of the number of vagrants in Brighton, a midnight inspection was made of houses likely to contain any such persons, and the number of occupants of these houses is given in the following table. The majority of these were not vagrants. The number appearing to come within the definition of vagrants were 71 men, 16 women, 1 child over 10, and 5 under 10.

Enquiries respecting Vagrants in Brighton on the night of July 28th, 1905.

Resident in Brighton over 1 month.				Resident in Brighton less than 1 month.			
		Children				Children	
Males.	Females	over 10	under 10	Males.	Females.	over 10	under 10
COMMON LODGING HOUSES.							
181	4	—	4	69	3	—	—
CHURCH ARMY LABOUR HOME.							
11	—	—	—	—	—	—	—
BEER HOUSES.							
32	—	—	—	5	—	—	—
UNION HAWKERS.							
—	—	—	—	17	—	—	—
HOUSES LET IN LODGINGS.							
193	109	21	78	32	15	—	2

REMOVAL OF HOUSE REFUSE.

In accordance with the arrangement made with the Borough Surveyor's Department, the following information has been supplied, and the necessary notices served in each instance.

Refused to have refuse removed	None
No answer to dustmen calling	None
No bins, defective bins, &c.	170
Other sanitary defects	None

OTHER PROCEEDINGS.

The following summonses, in addition to those already mentioned, were issued during the year.

Depositing sewage in the public street. Two defendants were fined 5s. and costs each, or 7 days.

Exposing patient when suffering from scarlet fever. Fined 40s. and costs, or one month.

Failing to vacate a condemned house. Defendant removed and smmons withdrawn on payment of costs.

HOUSING OF THE WORKING CLASSES ACT, PART II.

Official representations have been made by me, under Part II. of the above Act during 1905, that the following premises are in a state so dangerous to health, as to be unfit for human habitation :—

Situation of Premises.	No. of houses.	Legal proceedings taken.	Result.
Claremont Row ...	4	One	Closing order made and house now undergoing repair; the other three houses put into thorough repair without legal proceedings.
Wood Street	1	None	House put into thorough repair.
Carlton Row	1	None	Ditto, ditto.
Crescent Cottages ...	1	One	Closing order made.
Holland Street ..	2	Two	Summons adjourned. Houses put into thorough repair and summons withdrawn on payment of costs.
Mount Pleasant ...	1	None	House undergoing repairs.
Park Place	1	None	Ditto, ditto.
Sweet Patch	2	Two	One dismissed by magistrates on defendant undertaking to discontinue using part of the house. One adjourned by magistrates to allow alterations to be made to the house.

FACTORY AND WORKSHOP ACTS, SHOP HOURS ACTS, EMPLOYMENT OF CHILDREN ACT, etc.

The total number of visits made by Inspector Mills for the purpose of carrying out the provisions of the above Acts was 3,577. Of these 2,346 were for the purpose of inspection, and 1,231 the looking up of works and serving of notices, &c.

The following tables show the number of premises coming under the provisions of the above Acts at the end of 1905, the number registered on the new card register, the number of each kind of premises inspected, a detailed statement of defects found, and other particulars in accordance with the form laid down by H.M. Inspector of Factories:—

	No. of each kind of Working Place in Brighton.	The number of these transferred to the New Card Register.	Number Inspected 1905.
Factories	216	216	39
Workshops	2100	1663	517
Workplaces	150	—	23
Shops	3997	1458	1322
Premises where children are employed (Emment of Children's Act)...	574	—	445
	7037	3337	2346

The above total 7,037 represents probably about 6,200 separate premises.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—*Inspection.*

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories ... ... (Including Factory Laundries.)	39	5	—
Workshops... ... ... (Including Workshop Laundries).	475	108	—
Workplaces	23	2	—
Homeworkers' Premises	42	2	—
Total	579	117	—

2.—*Defects found.*

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied	Referred to H.M. Inspector	
Nuisances under the Public Health Acts:—				
Want of cleanliness	61	56	—	—
Want of ventilation	18	16	—	—
Overcrowding	6	6	—	—
Want of drainage of floors	2	2	—	—
Other nuisances...	41	38	—	—
*Sanitary accommodations: insufficient ...	5	5	—	—
*Sanitary accommodations: unsuitable or defective	20	19	—	—
*Sanitary accommodations: not separate for sexes	6	5	—	—
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (S. 101)	5	2	—	—
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	104	98	—	—
Failure as regard lists of outworkers (S. 107). Number of Firms ...	64	64	—	—
Giving out work to be done in premises which are unwholesome (S. 108) ...	—	—	—	—
Giving out work to be done in premises which are infected (S. 110) ...	—	—	—	—
Allowing wearing apparel to be made in premises infected by scarlet fever or smallpox (S. 109)...	—	—	—	—
Other offences	—	—	—	—
Total	332	311	—	—

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* Section 22 of the Public Health Acts Amendment Act, 1890, is in force in Brighton.

The amount of sanitary accommodation required is in accordance with the Home Office Order of February 4th, 1903.

3.—*Other matters.*

Class.	Number.	
Matters notified to H.M. Inspectors of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	14	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) — notified by H.M. Inspector	8	
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Acts, but not under the Factory Act (S. 5) — Reports (of action taken) sent to H.M. Inspectors	8	
Other	—	
Underground Bakehouses (S. 101) :—		
Certificates granted during the year	3	
In use at the end of the year	114	
	Number of	
Homework :—	Lists.	Out-workers
List of Outworkers (S. 107):—		
Lists received	85	779
Addresses of outworkers — forwarded to other Authorities	2	16
Addresses of outworkers — received from other Authorities	6	72
Homework in unwholesome or infected premises :—	Wearing Apparel.	Other.
Notices prohibiting homework in unwholesome premises (S. 108)	—	—
Cases of infectious disease notified in homeworkers premises	7	—
Orders prohibiting homework in infected premises (S. 110)	2	—
Workshops on the Register (S. 131) at the end of the year :—		
Making of Wearing Apparel ... 802		
Bakehouses ... 188		
Laundries ... 148		
Furnishing Trades ... 134		
Building Trades ... 116		
Other Trades ... 275		
Total number of workshops on Register	1663	

The only special work in connection with workshops in 1905 has been the alterations and improvements of some of the worst of the above-ground bakehouses, and the inspection of all hairdressers' workshops, and subsequent improvements of those in an insanitary condition.

Experience has shown that a more frequent inspection is necessary of factories and workshops than of shops, but during the past year this course has not been practicable, owing to the time taken up in the special inspections of shops.

SEATS FOR SHOP ASSISTANTS ACT, 1899.

Seven shops were inspected, in which more than three females were employed, six were found to have provided seats, one was without seats for the assistants, and these were subsequently provided.

SHOP HOURS ACT, 1892-5 AND 1904.

The number of visits and inspections under the above Acts was 1,332. In 212 of the shops where persons under 18 years of age are employed, the required abstract of the Act was not shewn, and abstracts of the Acts were served on the occupiers.

No complaints have been received during the year of overwork, but three cases were found during the course of inspection. The employers appearing to have acted in ignorance of the Act were cautioned.

Re APPLICATION FOR CLOSING ORDER BY GROCERS, TEA DEALERS, PROVISION MERCHANTS, OIL, COLOR AND ITALIAN WAREHOUSEMEN UNDER THE SHOP HOURS ACT, 1904.

This application was for an order curtailing the evening hours of work, and enforcing a special half holiday. The application necessitated a special investigation by Mr. Mills.

A total of 820 shops were visited and inspected, a special Register was prepared as required by the Act, and 640 names and addresses were entered of shops, the occupiers of which traded entirely or to some extent in the articles usually sold in shops trading as those described in the application for the closing order.

Voting papers were prepared by the Town Clerk and sent by post; 473 valid papers were returned, of these 198 were in favour of the closing order and 275 against.

As the number of votes against the order amounted to more than one-third of the number of shops affected, the application failed.

Without going into the reasons for and against the order, the following facts may be quoted from the Inspector's detailed report.

In 233 of the shops where assistants were employed (other than members of the employers' family), 809 assistants, including errand boys, were employed, and when the very late and irregular hours during which these shops are now open are borne in mind, there can be no doubt that a half-holiday would have been a great boon to these employés and beneficial to their health. If the half-holiday only had been asked for, and shops where no assistants other than the occupier and his wife were employed had been exempted, there would, in the opinion of the Inspector, have been no doubt as to the success of such an application.

EMPLOYMENT OF CHILDREN'S ACT, &c.

In accordance with instructions received from the Town Clerk, copies of the new Bye-laws were served on all hairdressers and domestic laundries, and also (from a list supplied by the officers of the Education Committee) on the employers of children attending school.

685 copies of the Bye-laws were served personally.
395 on shops already coming under the Shop Hours Act.
81 on workshops coming under the Factory and Workshop Act.
98 on private persons.
70 on barbers shops.
41 on domestic laundries.

Several cases of infringement of Bye-law 5 have been found. These seemed to have occurred through the misrepresentation of the word "parcel," and the employers were cautioned.

PREVENTION OF CRUELTY TO CHILDREN ACT.

The duties under this Act (formerly carried out by H.M. Inspector of Factories) are to see that all the restrictions and conditions endorsed upon the licenses for children to perform in places of public entertainment are properly complied with.

25 Licenses have been granted this year, a decrease of 11 from last year.

40 Children were employed, a decrease of 30 from last year.

7	were	employed	as Acrobats.
16	,,	,,	,, Actors and Actresses.
8	,,	,,	,, Musicians.
9	,,	,,	,, Singers and Dancers.

26 night inspections were made and 4 day visits, the conditions of the licenses were fairly well complied with, the exceptions being a tendency to keep them on the stage beyond their specified time, and to neglect their education. When the managers have been visited

early in the week and cautioned, the conditions have been strictly adhered to for the remainder of the week. One case of employment without license was reported to the Chief Constable.

The diminution in the number of children employed is very satisfactory. It is in part due to the action of Metropolitan Magistrates in refusing in many cases to grant these licenses.

SPECIAL INSPECTION OF HAIRDRESSERS AND BARBERS SALOONS.

Early in the year application was made by a number of local hairdressers for the giving of certificates, stating that their premises were in a sanitary condition. On my recommendation, in view of the greater importance of other work for which we already had an insufficient staff, the detailed and frequent visits involved as a condition of giving such certificates were not undertaken. At the same time a thorough inspection was made by Inspectors Mills and Ward of all such premises in the town.

122 premises were inspected, comprising
119 gentlemens' saloons,
30 ladies' saloons, and
27 workrooms.

Employed in the above are 231 males and 39 females.

As pointed out in a special report on this subject, the main defects discovered in the course of the recent inspection affected in varying degrees (1) customers and (2) workmen. There is much more hope of thoroughly efficient remedies for evils affecting customers than for evils affecting workmen, as business success depends very much on the cleanliness of premises and utensils. The workmen and women on the other hand are exposed to any evil conditions that exist for protracted periods, and their health is more likely to suffer than that of customers. Hence special importance attaches to those measures of improvement calculated to benefit the attendants.

Workshops were in some instances unsatisfactory, and improved means of ventilation were recommended.

The Ventilation of Saloons was often defective. No hard and fast rule could be made as to the provision of means for carrying off the fumes from gas stoves, urns, &c., but—especially in view of the fact that the Brighton coal gas contains a large excess of the dangerous gas carbon-monoxide—it is important that the products of combustion should not escape into the saloons or workrooms. Much headache and ill-health are caused in this way. The visit of these premises again drew attention to the evils of lock-up shops.

Lock-up Shops are unfortunately being more frequently used not only by hairdressers, but also for other businesses. They are most objectionable, unless much more efficient through ventilation is provided than is usually found. It is a question whether special powers are not advisable to prevent the use of lock-up shops (a) in which back ventilation as well as front ventilation cannot be secured, and (b) in which no w.c. and no drainage whatever are provided.

The use of the machine brush is, owing to the dust, undoubtedly a source of risk to the health of the hairdresser, and it is advisable that a respirator should be worn when working the brush.

The dust and fine hairs from the floor of the saloons should be carefully removed at frequent intervals, and not allowed to accumulate in cupboards.

The water supply and the means of its discharge are important in the interest of the customers.

Notices have been served in regard to the premises in which there is no provision for removing waste water, as this almost necessarily implies dirty sponges and other utensils.

The arrangements for *personal cleanliness* are in the hands of the public themselves, and they could without difficulty secure great improvement. It is only fair to say however that there is an increasing attention to the minutiæ of cleanliness in the majority of the hairdressers' shops. As might be expected, the hairdressers making the lowest charges have the most need for improvement in these respects. Thirty out of 61 of such shops are described by the Inspector as having bad arrangements as to cleanliness in one or other particular. In only a few, either in this class of shop or in the class which make higher charges is a newly washed towel supplied for every customer. Often the towel has only been pressed.

Powder puffs, although objectionable, are still often employed.

Soap tablets, although much less cleanly than fresh soap powder for each customer, are still generally used.

The brushes, combs, razors, and scissors are not always scrupulously cleansed. This is more important than the use of a disinfectant, unless the latter is regarded as an additional means of protection, and not as superseding the need for frequent cleansing with soap and water.

It is most desirable that sponges should be superseded by small washable towellettes. Increased attention is also being paid to the desirability of movable covers to the head rests for customers.

Unsound Meat seized or surrendered during 1905.

Description.	Number of Animals.	Number condemned by Magistrate.	Number destroyed by arrangement with owners.	Total weight in lbs.
A.—*At the Abattoir*—				
Bullocks (whole carcase) ..	7	—	7	4760
,, (part of carcase)	276	—	276	4953
Calves (whole carcase) ...	2	—	2	272
,, (part of carcase) ..	28	—	28	318
Sheep (whole carcase) ..	15	—	15	1040
,, (part of carcase) ..	201	—	201	1316
Pigs (whole carcase) ...	28	—	28	4266
,, (part of carcase) ..	1599	—	1599	7002
B.—*In the Private Slaughter-Houses and Shops*—				
Bullocks (whole carcase) ...	6	—	6	5965
,, (part of carcase)	455	—	455	5209
Calves (whole carcase) ...	3	—	3	190
,, (part of carcase) ...	14	—	14	111
Sheep (whole carcase) ..	17	—	17	1182
,, (part of carcase) ...	219	—	219	978
Pigs (whole carcase) ...	22	2	20	2006
,, (part of carcase) ...	345	--	345	1168
	3237	2	3235	40736

Of the beasts, 1 bull and 5 cows were found to be tubercular to such an extent that the whole carcase was destroyed; 184 parts of beasts were also found to be tuberculous, 1 calf and 9 parts of calves were tuberculous 14 pigs, and 717 parts of pigs were also found to be tuberculous.

The total amount of meat destroyed in connection with the private, slaughter-houses and shops 16,809 lbs.; at the Abattoir 23.927 lbs.

Other foods seized or surrendered during 1905.

201 Oysters.

7 barrels of Herrings, 13 cwts.

4 Fowls.

4 Hake, 84 lbs.

324 frozen Australian Rabbits—Of the Rabbits 72 and 201 oysters were condemned by Magistrates' order, the remainder were surrendered by owner.

14 cases Bananas.

1 cask Oranges.

25 half sieves Cherries.

30 quarts Strawberries.

4 boxes Apricots.

4 boxes Tomatoes.
21 half sieves Black Currants.
54 baskets Red Currants.
17 bushels Plums.
15½ ,, Pears.
1½ boxes Chocolate.

THE PUBLIC ABATTOIR

Has now been open for eleven complete years. The number of animals slaughtered in each successive year from the first has been 6,991, 11,184, 12,054, 12,650, 16,384, 18,304, 17,645, 20,318, 22,962, 25,804, and 26,978.

The number of animals killed in 1905 was 26,978, viz. :—2,300 beasts, 1,534 calves, 8,596 sheep, 1,037 lambs, and 8,197 pigs in the public slaughter houses, and 81 beasts, 69 calves, 1,335 sheep, 334 lambs, and 3,495 pigs in the private slaughter houses at the Abattoir.

The amount received in tolls since the opening of the Abattoir has been as follows:—November and December, 1894, £7 13s. 4d.; 1895, £102 15s. 4d.; 1896. £122 4s.; 1897, £115 7s. 7d.; 1898, £185 10s. 3d.; 1899, £243 9s. 4d.; 1900, £279 17s.; 1901, £271 13s. 10d.; 1902, £352 14s. 10d.; 1903, £402 11s. 10d.; 1904, £434 4s. 3d.; 1905, £451 9s.

In addition to the above amounts there is also an income of £85 per annum from the rental of private slaughter-houses at the Abattoir.

PRIVATE SLAUGHTER-HOUSES.

In various parts of the town 34 private slaughter-houses are in use. None have been closed during 1905. The Bye-laws for slaughter-houses have, on the whole, been fairly well carried out during the year, no case requiring prosecution having arisen. Each slaughter-house is visited several times a week by Inspector Cuckney, the Superintendent of the Abattoir.

SALE OF FOOD AND DRUGS ACTS.

Number of samples collected	503			
,, ,, adulterated	55			
,, prosecutions	15			
,, convictions	10			
,, withdrawn	4			
,, dismissed	1			
Aggregate amount in fines ...		£36	5	0
Analysts' fees recovered ...		3	10	0
		£39	15	0

Cost of samples	£3	4	0¾
Cost of Analysis	127	8	0
Analyst's salary	50	0	0
Cost of assistance ... Postage and railway fares	6	8	6
	£187	8	6¾
Fines and analyst's fees recovered	39	15	0
Net cost of working the Act ...	£147	13	6¾

Eight milk-sellers were fined amounts varying from £15 to 10s. One provision dealer was fined 10s. for exposing margarine for sale without being labelled, and one provision dealer was fined £5 for selling margarine as butter.

It will be noted that the net cost of administrating the Act was about £147, or nearly 6s. a sample. This does not include any portion of the expense incurred by the Public Health Department in working the Act. In some districts the cost of administering the Act is fully defrayed by the fines inflicted. Small fines, especially in milk-adulteration cases, are recouped by the dishonest tradesmen by a very few days' sale. The risks of early detection of continued adulteration are relatively small.

Sample.	Nature and extent of Adulteration.	Result of Prosecution.
1 Margarine ...	Exposing margarine for sale without being labelled ...	Fined 10s. and costs or 14 days' imprisonment.
1 Milk	Deficient in fat 10 per cent. ...	Fined 5s. and costs or 7 days' imprisonment.
1 Milk	Deficient in fat 6·6 per cent. ..	Fined 20s. and costs or 14 days' imprisonment.
1 Butter ...	Adulterated with 100 per cent. of fat other than butter fat	Fined £5 0s 0d. and costs or one months' imprisonment.
1 Milk	Deficient in fat 30 per cent. ...	Fined £5 0s. 0d. and costs or one months' imprisonment.
1 Milk	Deficient in fat 13 per cent. ...	Fined 40s. and costs or 14 days' imprisonment.
1 Milk	Deficient in fat 6·6 per cent. ...	Withdrawn on payment of costs.
1 Milk	Deficient in fat 6 6 per cent. ...	Withdrawn on payment of costs.
1 Milk	Deficient in fat 20 per cent. ...	Fined £5 0s. 0d. and costs or one months' imprisonment.
1 Milk	Deficient in fat 6.6 per cent. ...	Withdrawn on payment of costs.
1 Milk	Deficient in fat 20 per cent. ...	Fined 10s. and costs or 14 days' imprisonment.
1 Milk	Deficient in fat 20 per cent. ...	Fined £15 0s. 0d. or one months' imprisonment.
1 Milk	Deficient in fat 26 per cent. ...	Fined 40s. and costs or 14 days' imprisonment.
1 Milk	Deficient in fat 6 6 per cent. ...	Withdrawn on payment of costs.
1 Milk	Deficient in fat 6·6 per cent. ...	Dismissed with costs.

In the last case in the above list the defendant exercised his right to have an independent analysis by the officials of Somerset House, and he had in court a certificate of analysis by a private analyst. At the adjourned hearing the private analyst gave evidence to the effect that there was a deficiency of only 3 per cent. of fat (the amount being 2·97). The Somerset House certificate stated that there was a deficiency of 7 per cent. of fat. The actual figures for the fat were 2·78 as against the 2·8 given in the certificate of the Brighton public analyst. These figures (2·78) were twice, during the hearing of the case, cited by a magistrate as indicating that the amount of fat in the milk, as shewn by the Somerset House analysis, was greater than that shewn by the Brighton public analyst (2·8) ! This is an additional reason for the fixed standard urged by Mr. Blyth on page 51.

WORK OF THE SCHOOL NURSE.

The following table gives a summary of the first complete year of Miss Dixon's work as school nurse.

Summary of School Nurse's Work during 1905.

		Boys.	Girls.	Infants.	Total.
Cases of	Infectious Disease	12	10	46	68
	Ringworm	61	71	86	218
	Itch	11	17	11	39
	Verminous Heads	34	486	211	731
	Eczema	49	38	98	185
	Other Conditions	200	452	250	92
	Total Cases	367	1074	702	2143

The action taken in regard to the above children has led to a marked reduction in the period of their exclusion from school. The effect of the work cannot be completely guaged by a tabular statement. The examinations and notices served have a great influence on other parents, and the general standard of cleanliness has improved.

That this is so is indicated by the condition of the children at school-ages (4 to 14) when admitted to the Borough Sanatorium for scarlet fever or diphtheria, for which the records of three years are given below:—

Percentage of the Total Children of School Ages admitted to the Borough Sanatorium who had

Year.	Clean Heads.	Verminous Heads.	Ringworm.	Eczema.	Number of Children on which the percentages are based.
1900 ..	42	32	9	17	429
1904 ...	53	40	5	2	249
1905 ...	75	21	4	—	204

The ringworm cases are the most difficult of all to manage. They are frequently sent back to school when still contagious, sometimes with medical certificates.

Much greater good might be done if the children seen by the school nurse could be "followed up" at home and more rigidly supervised.

TABLE I.—APPENDIX.

		Number of Deaths during 1905.											
	Births in 1905.	All causes.	Deaths under one year.	Small Pox.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Measles	Whooping Cough.	Diarrhœa.	Phthisis.	Other Tubercular Diseases.	Bronchitis and Pneumonia.
Kemp Town	93	64	4	—	—	—	—	—	—	1	6	2	8
Queen's Park	187	151	28	—	—		—	—	—	8	11	7	27
Pier	188	157	32	—	—	—	—	—	2	2	18	5	27
Pavilion ...	63	40	8	—	—	—	—	—	1	—	—	1	9
Regency ...	105	96	10	—	—	—	—	—	1	1	8	3	13
West ...	40	68	3	—	—	—	1	—	1	—	2	1	9
Montpelier	71	96	15	—	—	—	—	—	1	3	6	7	13
St. Nicholas	209	117	20	—	—	1	—	—	—	5	20	2	12
St. John's ...	341	195	46	—	—	1	—	—	—	8	22	6	29
Hanover ..	344	157	31	—	—	1	1	—	1	5	16	4	22
Lewes Road	504	185	39	—	—	1	—	1	2	3	28	8	20
St. Peter's ...	169	96	21	—	1	—	—	1	1	3	14	6	12
Preston Park	259	99	12	—	—	1	—	1	—	—	11	4	10
Preston ..	338	152	28	—	—	—	—	1	1	5	10	13	19
	2911	1673	297	—	1	5	2	4	11	44	172	69	230

Of the 220 deaths in the Workhouse, five were of children who were born in the Workhouse.

The Queen's Park Ward contains the Workhouse. Where the information was obtainable, deaths in this Institution have been distributed to the Wards from which the patients were removed to the Workhouse. There remains 27 deaths (out of the 151 in the Queen's Park Ward) which occurred in the Workhouse, of patients from outside Brighton or whose Brighton home address was unknown. Of these three were due to phthisis and two to other tubercular diseases.

The 40 deaths in the Pavilion Ward include one of a visitor to Brighton in the Lying-in Hospital.

The 96 deaths in the Montpelier Ward do not include the deaths of a number of children occurring in the Children's Hospital, whose home addresses were known, these being stated in the Wards to which they belong. They include 16 deaths in this Institution of patients whose home address was outside Brighton. Of these, two were due to diarrhœa, seven to tubercular diseases, and two to respiratory diseases.

The 117 deaths in the St. Nicholas Ward include two deaths of patients from outside Brighton.

TABLE II.—APPENDIX.

INFANTILE MORTALITY DURING THE YEAR 1905.

Deaths from Stated Causes in Weeks and Months under One Year of Age.

	CAUSE OF DEATH.	Under 1 week.		1–2 weeks.		2–3 weeks.		3–4 weeks.		Total under 4 weeks.	1–2 months.		2–3 months.		3–4 months.		4–5 months.		5–6 months.		6–7 months.		7–8 months		8–9 months.		9–10 months.		10–11 months.		11–12 months.		Total Deaths under 1 year.
		M.	F.	M.	F	M.	F.	M.	F		M.	F	M.	F.	M.	F.	M.	F	M	F.	M.	F.	M.	F	M.	F.	M.	F	M.	F.	M.	F	
All Causes.	Certified	40	27	10	5	4	8	2	5	101	17	10	19	15	9	9	13	8	12	8	4	8	8	9	9	5	5	9	4	2	6	5	295
	Uncertified	1	1	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Common Infectious Diseases.	Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Chicken Pox...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Measles	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
	Scarlet Fever...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Diphtheria : Croup ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Whooping Cough	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	1	—	—	—	1	—	1	—	—	—	—	—	—	5
Diarrhœal Diseases.	Diarrhœa, all forms, including Gastro intestinal Catarrh	—	—	—	—	—	—	—	—	—	1	3	5	—	1	2	5	1	2	1	—	—	1	2	1	—	2	1	1	—	2	2	33
	Enteritis	—	—	—	—	—	1	—	—	1	—	2	2	—	—	1	—	1	1	1	—	—	1	2	—	1	2	—	1	1	1	—	18
Wasting Diseases.	Premature Birth	23	17	3	3	1	2		2	51	2	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55
	Congenital Defects ...	—	2	1	—	—	—	—	1	4	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	—	—	—	—	—	—	—	7
	Injury at Birth	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Want of Breast Milk	—	—	—	—	—	—	—	—		—	—	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
	Atrophy, Debility, Marasmus	2	2	2	—	2	1	—		9	6	1	1	4	1	2	1	1	1	1	2	2	—	1	1	—	1	1	—	—	—	—	36
Tuberculous Diseases.	Tuberculous Meningitis	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—		1	—	1	—	—	1	—	1	—	1	—	—	—	—	6
	Tuberculous Peritonitis Tabes Mesenterica	—		—	—	—	—					—	—	1	—	1	—		—	—	—	—	—		—	—	—	—	—	—	—	1	3
	Other Tuberculous Diseases	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	1	—	1	1	—	—	—	—	—	—	—	1	—	6
	Erysipelas	—	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Syphilis	—	1	1	—	—	—			2	1	2	1	1	1	—	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	10
	Rickets	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	2
	Meningitis		—	—	—		—	—	1	1	—	—	—	—	—	—	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	1	5
	Convulsions	4		1	—	—	1			6	—	—	2	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	10
	Bronchitis	—	—	—	—	—	—	1	—	1	2		3	1	—	3	2	1	—	—	—	—	1	—	—	—		1	—	1	—	1	17
	Laryngitis	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Pneumonia				1		2			3	2	—	—	2	1	—	2	—	2	1	—	1	1	2	4	2	—	1	—	—	2	—	26
	Suffocation, overlaying	2	2	—		—	—	—	1	5	1	1	1	1	1	—		—	—	—	1		—		—	—	—	—		—	—	—	11
	Other Causes	10	4	1	1	1	1	1		19	1	—	2	1	1	—	2	1	4	2	—	1	1		2	—		1	2				40
		41	28	10	5	4	8	2	5	103	17	10	19	15	9	9	13	8	12	8	4	8	8	9	9	5	5	9	4	2	6	5	297

TABLE III.—APPENDIX. (*Vital Statistics of Brighton during 1904, and previous Years*).

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		DEATHS UNDER ONE YEAR OF AGE.		DEATHS AT ALL AGES. TOTAL.		DEATHS IN PUBLIC INSTITUTIONS.	Deaths of Non-residents registered in public institutions within the Borough.	Deaths of Residents registered in public institutions beyond the Borough.	DEATHS AT ALL AGES NET.	
		Number.	Rate.†	Number.	Rate per 1,000 Births registered.	Number.	Rate.†				Number.	Rate.†
1	2	3	4	5	6	7	8	9	10	11	12	13
1895 ...	119,010	3057	25·7	503	164	—	—	360	—	—	—	—
1896 ...	119,760	3025	25·3	410	124	—	—	369	—	—	—	—
1897 ...	120,510	2986	24·8	428	144	—	—	381	—	—	—	—
1898 ...	121,270	3035	25·0	544	179	—	—	386	—	—	—	—
1899 ...	122,040	3058	25·1	530	173	—	—	447	—	—	—	—
1900 ...	122,860	2920	23 8	484	166	—	—	501	—	—	—	—
1901 ...	123,668	2984	24·1	483	162	2085	16 8	485	68		2025	16·4
1902 ...	124,539	3072	24·3	387	125	2052	16·2	525	92	15	1975	15·7
1903 ...	125,465	3046	24·3	348	114	1833	14·6	458	72	8	1769	14·1
1904 ..	126,286	2963	23·5	395	133	2156	17 1	516	96	7	2060	16·3
Averages for years 1895-1904	122,534	3014	24·6	451	148	—	—	443	—	—	—	—
1905 ...	127,183	2901	22.8	297	102	1739	13·6	462	94	51	1696	13.3

†Rates in Columns 4, 8 and 13 calculated per 1000 of estimated population.

TABLE IV. -APPENDIX. *(Local Government Board Table).*

Cases of Infectious Disease Notified during the Year 1904.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE BOROUGH.												TOTAL CASES NOTIFIED IN EACH WARD														NO. OF CASES REMOVED TO HOSPITAL FROM EACH WARD.													
	At all Ages.	At Ages—Years.																																						
		Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.	1 Kemp Town	2 Queen's Park	3. Pier	4. Pavilion	5. Regency	6. West	7. Montpelier	8. St. Nicholas	9. St. John	10. Hanover	11. Lewes Road	12. St. Peter	13. Preston Park	14. Preston	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Small Pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria ...	221	3	55	60	38	19	14	21	5	5	1	—	18	14	21	7	9	8	8	25	24	19	26	5	16	21	11	6	15	7	7	4	4	24	17	16	24	3	14	12
Membranous Croup ...	2	—	2	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—
Erysipelas ...	85	4	2	3	3	8	5	10	14	14	12	10	6	8	12	3	1	3	3	7	6	9	10	3	6	8	1	1	1	—	—	—	1	—	—	—	1	—	—	—
Scarlet Fever	206	5	52	86	36	11	5	6	5	—	—	—	13	13	10	12	8	2	10	18	14	22	22	12	24	26	6	11	8	8	8	1	5	17	15	15	19	9	21	23
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever	34	—	—	6	4	3	4	9	3	4	—	1	2	1	2	3	1	4	1	3	1	6	—	4	4	2	2	1	1	3	1	1	1	3	1	6	—	3	3	1
Relapsing Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Continued Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever ...	9	—	—	—	—	1	3	5	—	—	—	—	—	—	2	—	—	—	1	—	1	2	2	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals ...	557	12	111	155	81	42	31	51	27	23	13	11	39	37	48	25	19	17	23	53	46	58	60	24	50	58	20	20	26	18	16	6	11	44	33	37	44	15	38	36

TABLE V.—APPENDIX.

CAUSES OF DEATH.	AGE Years— 0–1		1–2		2–3		3–4		4–5		5–10		10–15		15–20		20–25		25–35		35–45		45–55		55–65		65–75		75–85		85 and Upwards.		Total Males	Total Females	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Scarlet Fever	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Influenza	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	1	—	—	1		—	1	4	1	1	4	1	5	1	1	—	—	10	15	25
Whooping Cough	1	4	4	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	5	11
Diphtheria	—	—	—	—	—	1	—	—	1	1	—	1	—	—	—	—	—	—	—		—	—	1	—	—	—	—	—	—	—	—	—	2	3	5
Enteric Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	2	2
Diarrhœa	21	12	3	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	—	—	1	1	—	—	27	17	44
Varicella	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Syphillis	5	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	—	—	—	—	—	—	6	7	13
Erysipelas	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	2	—	1	1	1	1	—	6	4	10
Puerperal Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	3		—	—	—	—	—	—	—	—	—	—	—	—	4	4
Septicœmia	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Ulcerative Endocarditis	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1	2
Cellulitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
Carbuncle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—		—	—	—	—	1	—	1
Rheumatic Fever	—	—	—	—	—	—	—	—	—	—	1	—	—	2	—	—	—	—		1	—		—	1	—	1	—	—	—	—	—	—	1	5	6
Brain Tuberculosis	3	3	3	2	2	3	1	3	—	1	1	2	1	—	—	—	—	—	—		1	—	1	—	—	—	—	—	—	—	—	—	13	14	27
Lung Tuberculosis	—	1	2	—	—	2	2	—	—	—	—	1	—	1	6	4	18	6	21	18	21	12	26	10	10	3	5	3	—	—	—	—	111	61	172
Alimentary Tuberculosis	—	3	1	1	3	—	—	1	—	1	—	1		—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	8	12
General and Undefined Tuberculosis	2	2	4	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—	1	1	2	—		1	—		1	—	—	—	—	—	11	6	17
Other Forms of Tuberculosis	1	—	1	—	1	—	—	—	—	—	—	—	—	1	1	1	—	1	3		1	—	—	1	—	1			—	—	—	—	8	5	13
Alcoholism, Acute	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	1	—	—	2	1	3
,, Chronic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	1	2	—	—	—	—	—	—	—	—	3	3	6
Lead Poisoning. Chronic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—		—	1	—	—	—	—	—	1	—	1
Rheumatoid Arthritis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—				—	—	—		—	2	2
Gout	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	1	—	—		4	—	4
Cancer	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—		2	1	12	10	19	20	22	18	26	8	13	2	5	59	100	159
Diabetes Mellitus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	2	—	4	—	3	1	—	1	—		9	2	11

TABLE V. *(continued)*.

CAUSES OF DEATH.	Age Years— 0–1		1–2		2–3		3–4		4–5		5–10		10–15		15–20		20–25		25–35		35–45		45–55		55–65		65–75		75–85		85 and Upwards.		Total Males	Total Females	Total.
	M.	F.	M.	F.	M	F.	M.	F.	M.	F	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F	M.	F.	M.	F.			
Anæmia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	1	–	–	2	–	–	1	–	–	3	3	6
Lymphadenoma	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	3	—	3
Premature Birth	29	26	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	29	26	55
Debility at Birth	7	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	4	11
Atelectasis	5	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	2	7
Congenital Defects	2	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	5	7
Want of Breast Milk	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	4
Atrophy, Debility, Marasmus	20	16	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	23	16	39
Dentition	1	–	2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	1	4
Rickets	–	2	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	4	6
Old Age	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1	8	14	30	33	12	31	52	79	131
Convulsions	8	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	9	4	13
Meningitis	2	3	–	–	1	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	5	8
Encephalitis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	—	1
Apoplexy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	3	4	1	7	1	3	–	1	7	15	22
Softening of Brain	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	1	1	–	1	–	–	3	2	5
Hemiplegia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	2	4	1	1	–	7	3	10
General Paralysis of Insane	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	—	1	1
Other forms of Insanity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	1	1	2
Cerebral Tumour	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	–	–	–	1	4	5
Epilepsy	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	2	–	–	–	–	–	–	1	–	–	1	–	–	–	1	–	5	2	7
Locomotor Ataxy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	1	–	–	–	–	–	3	—	3
Diseases of Spinal Cord	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2	–	1	3	2	2	–	–	5	6	11
Ill-defined Nervous Diseases	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	2	1	–	1	3	1	2	5	4	3	1	–	15	11	26
Otitis, Otorrhœa	–	1	–	–	–	–	–	–	–	–	1	–	2	–	–	–	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	4	2	6
Diseases of Nose	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	—	1
Pericarditis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	—	1
Endocarditis, Valvular Diseases of Heart...	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	1	1	2	2	2	3	3	–	8	5	4	4	4	4	1	1	1	21	28	49
Aneurism	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	2	–	–	–	–	–	–	–	5	—	5

TABLE V. *(continued).*

CAUSES OF DEATH.	Age. 0–1		Years— 1–2		2–3		3–4		4–5		5–10		10–15		15–20		20–25		25–35		35–45		45–55		55–65		65–75		75–85		85 and Upwards.		Total Males	Total Females	Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Senile Gangrene	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	1	–	2	1	3
Embolism Thrombosis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	1	1	–	–	1	2	3	5
Other Circulatory Diseases	–	–	–	–	–	–	1	1	–	–	–	1	1	2	–	1	–	–	2	–	4	3	9	13	13	13	20	21	12	31	3	4	65	90	155
Laryngitis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	—	1
Bronchitis, Acute	9	8	1	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	2	–	–	2	2	–	4	2	3	17	24	41
Bronchitis, Chronic...	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	7	12	9	13	17	12	3	5	39	45	84
Pneumonia, Lobar	–	–	2	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2	–	–	–	–	–	1	–	–	–	–	–	5	1	6
Pneumonia, Lobular	10	7	2	3	1	–	1	1	–	–	1	–	–	–	–	1	1	–	–	–	–	–	2	1	5	–	1	1	2	1	–	–	26	15	41
Pneumonia	4	5	2	3	–	–	–	–	–	1	–	–	–	–	1	–	1	–	3	3	–	2	3	1	4	3	8	5	4	5	–	–	30	28	58
Pleurisy	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	2	2	4
Other Respiratory Diseases	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	1	1	–	3	–	1	–	–	2	6	8
Diseases of Œsophagus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	—	1
Diseases of Stomach	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1	1	–	1	1	–	–	–	7	2	9
Ulcer of Stomach	–	–	–	–	–		–	–	–	–	–	–	–	–	–	–	1	–	1	1	2	–	2	1	–	1	–	–	–	–	–	–	6	3	9
Enteritis	8	10	2	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	–	12	14	26
Appendicitis...	–	–	–	–	–	–	–	–	–	–	1	3	–	–	–	–	1	–	–	1	–	–	–	–	–	1	–	1	–	–	–	–	2	6	8
Obstruction of Intestine	2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	–	–	2	3	2	3	–	–	8	8	16
Other Diseases of Intestine	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	1	2
Cirrhosis of Liver	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	2	5	3	2	2	3	1	–	–	–	11	10	21
Other Diseases of Liver	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	3	–	2	1	2	2	1	3	–	1	–	8	8	16
Peritonitis	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	3	2	5
Other Diseases of Digestive System ...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	–	–	3	—	3
Diseases of Lymphatic System	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	1	2
Nephritis	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	–	1	1	–	1	–	–	1	–	–	–	4	3	7
Bright's Disease	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	1	–	1	–	4	3	3	3	6	2	4	3	4	–	–	–	23	17	40
Diseases of Bladder and Prostate... ...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	2	–	3	–	–	1	6	1	7
Other Diseases of Urinary System ...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	1	–	1	–	–	–	–	—	4	4
Diseases of Ovaries...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	—	1	1
Diseases of Uterus and Appendages ...	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	1	–	–	—	3	3

TABLE V. *(continued).*

CAUSES OF DEATH.	Age. Years— 0–1		1–2		2–3		3–4		4–5		5–10		10–15		15–20		20–25		25–35		35–45		45–55		55–65		65–75		75–85		85 and Upwards.		Total Males	Total Females	Total.
	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F			
Other Diseases of Pregnancy and Child Birth	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	2	2
Arthritis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	1	—	—	1	—	—	3	1	4
Other Diseases of Osseous System ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	1	1	2
Diseases of Integumentary System ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1
Accidental—																																			
In Vehicular Traffic	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	2	1	3
On Railways	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	3	—	3
Burns and Scalds	1	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	3
Poisons	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	1	1	2
Drowning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	—	—	—	1	—	—	—	—	—	—	—	3	1	4
Suffocation, overlaid in bed ...	6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	5	11
Suffocation, otherwise	4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	1	5
Falls	1	1	—	1	—	—	—	—	—	—	1	1	—	—	—	—	2	—	—	—	2	—	2	—	1	—	—	1	—	—	—	—	9	4	13
Otherwise and not stated	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3
Homicide	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	2	2
Suicide—																																			
By poison	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	2	—	2
By Hanging	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	1	—	1	—	—	—	—	—	—	—	3	2	5
By Drowning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	2	—	—	—	—	—	—	—	—	—	2	1	3
By Cut or Stab	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	2
Other Ill-defined and not Specified Causes	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	—	—	—	—	—	3	1	4
	163	134	37	26	14	10	9	10	1	4	10	13	6	10	12	14	34	12	41	40	66	51	87	86	117	87	113	137	111	134	31	53	852	821	1673